

RICHLAND COUNTY

COMMUNITY WILDFIRE PROTECTION AND PRE-DISASTER MITIGATION PLAN



Yellowstone River Ice Jam and Flooding, March 2003

(Photo courtesy of Tanja Fransen, NOAA, Glasgow, Montana)

***Prepared by: Cossitt Consulting
and
Rand Herzberg***

DECEMBER 2005

**RICHLAND COUNTY COMMUNITY WILDFIRE PROTECTION
AND PRE-DISASTER MITIGATION PLAN
DECEMBER 2005**

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RESOLUTION NO. 05-10

**A RESOLUTION TO APPROVE AND ADOPT
THE RICHLAND COUNTY COMMUNITY WILDFIRE PROTECTION
AND PRE-DISASTER MITIGATION PLAN**

WHEREAS, Richland County has prepared a Community Wildfire Protection and Pre-Disaster Mitigation Plan ("the Plan");

WHEREAS, the Plan covers rural areas of the county and all of the incorporated communities, including the town of Fairview and the City of Sidney; and

WHEREAS, the Plan meets all the requirements of the Interim Final Rule published in the Federal Register on February 26, 2003, at 44 CFR Part 201 as part of the Disaster Mitigation Act of 2000.

NOW, THEREFORE BE IT,

RESOLVED, the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan is approved and adopted.

FURTHER RESOLVED, the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan is to be followed and incorporated into planning for the County.

FINALLY RESOLVED, the County will work and cooperate with the two incorporated communities in the County to implement the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan.

PASSED and APPROVED by the Richland County Commission this 31st day of October, 2005.

FOR THE COUNTY OF RICHLAND, MT.

By: Don Steppler
Don Steppler

Henry Johnson
Henry Johnson

Mark Rehbein
Mark Rehbein

Attest: Penni D. Lewis
Penni Lewis

RESOLUTION NO. 3364

**A RESOLUTION TO APPROVE AND ADOPT
THE RICHLAND COUNTY COMMUNITY WILDFIRE
PROTECTION
AND PRE-DISASTER MITIGATION PLAN**

WHEREAS, Richland County has prepared a Community Wildfire Protection and Pre-Disaster Mitigation Plan ("the Plan");

WHEREAS, the Plan covers rural areas of the county and the incorporated communities, including the city of Sidney and the town of Fairview; and

WHEREAS, the Plan meets all the requirements of the Interim Final Rule published in the Federal Register on February 26, 2003, at 44 CFR Part 201 as part of the Disaster Mitigation Act of 2000.

NOW, THEREFORE BE IT,

RESOLVED, the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan is approved and adopted.

FURTHER RESOLVED, the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan is to be followed and incorporated into planning for the city.

FINALLY RESOLVED, the city will work and cooperate with the county and the town to implement the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan.

PASSED and APPROVED by the Sidney City Council this 7th day of November, 2005.

FOR THE CITY OF SIDNEY, MONTANA

By: Bret Smelser
Bret Smelser, Mayor

Attest: Brenda Thogersen
Brenda Thogersen, City Clerk



RESOLUTION NO. 402

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF FAIRVIEW, MONTANA, APPROVING AND ADOPTING THE RICHLAND COUNTY COMMUNITY WILDFIRE PROTECTION AND PRE-DISASTER MITIGATION PLAN

WHEREAS, Richland County has prepared a Community Wildfire Protection and Pre-Disaster Mitigation Plan ("the Plan"); and

WHEREAS, the Plan covers rural areas of the county and the incorporated communities, including the Town of Fairview, and the City of Sidney; and

WHEREAS, the Plan meets all the requirements of the Interim Final Rule published in the Federal Register on February 26, 2003, at 44 CFR Part 201 as part of the Disaster Mitigation Act of 2000.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF FAIRVIEW, MONTANA:


Section 1: The Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan is approved and adopted.

Section 2: The Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan is to be followed and incorporated into the planning for the town.

Section 3: The town will work and cooperate with Richland County and the City of Sidney to implement the Richland County Community Wildfire Protection and Pre-Disaster Mitigation Plan.

Section 4: This resolution shall be effective immediately upon its passage and approval.

PASSED, APPROVED, and ADOPTED this 12th day of December, 2005.


BRYAN CUMMINS, MAYOR

AYES	<u>5</u>
NOES	<u> </u>
ABSTAINING	<u> </u>
ABSENT	<u>1</u>

ATTEST:

GRACYIE SHARBONO, CLERK

Executive Summary

Richland County and the incorporated municipalities of Sidney and Fairview intend to become disaster resistant by preparing and implementing this Community Wildfire Protection and Pre-Disaster Mitigation Plan (CWPP/PDM). The plan identifies hazards and mitigation measures to reduce or prevent the effects of those hazards, and raises the awareness about the importance of taking personal and collective (public and private) responsibility for reasonably foreseeable natural disasters.

The plan was developed with leadership from Richland County Commissioners and mayors of Fairview and Sidney. Throughout the process, from identifying hazards to developing mitigation measures, efforts were made to encourage public involvement and to draw all interested parties into the preparation of the plan whether formally at the series of public meetings, or informally through one-on-one conversations. A Steering Committee appointed by the county commissioners oversaw the preparation of the plan by a contractor. The mitigation goals, objectives, and actions or projects were developed utilizing a wide range of expertise and interests located within the county.

Each of the signing entities to the plan, Richland County and the incorporated communities of Sidney and Fairview, participated in the development of the plan through the Steering Committee or via other meetings and phone calls, specifically by providing data, helping to set priorities, and identifying mitigation projects.

The natural disasters of most concern to participants in the planning process were drought, wildfire, severe winter storms, and flooding. Each of these priority hazards and other hazards (including severe thunderstorms, hail, wind, tornadoes, and hazardous materials) is profiled in the plan with a discussion of historic occurrences and vulnerability.

The three jurisdictions, the town of Fairview, the city of Sidney, and Richland County, have somewhat, but not significantly different risk exposure. Throughout the county and the incorporated communities, there is potential for winter storms, severe thunderstorms, hail, damaging winds, tornadoes, and drought. There does not seem to be any particular pattern for these types of events across the county. Flooding and flash flooding can also occur throughout the county—along the major river corridors, and also along intermittent drainages. Flood prone areas are the only areas for which determined geographic hazard areas have been determined. There are federally designated floodplain maps for specific areas of the county. Fairview has a mapped 100-year floodplain area that cuts across a portion of the town, but has not had significant historical losses related to that floodplain area. Lone Tree Creek, which crosses a portion of Sidney, has resulted in significant losses from flooding. The current 100-year floodplain map for Lone Tree Creek in Sidney is in the process of being updated. The floodplains of the Yellowstone and Missouri Rivers have been mapped for the rest of the county as well.

Six goals with corresponding objectives and projects were developed for the identified hazards of concern:

- Minimize the economic impacts of drought and water shortages.
- Expand capabilities to prepare for and respond to natural disasters.
- Mitigate the potential loss of life, property, and infrastructure from flooding.
- Reduce impacts of severe winter storms.
- Reduce potential for impacts of transportation-related hazardous materials spills.
- Reduce the impacts of wildfire.

This plan serves the following jurisdictions, the town of Fairview, the city of Sidney, and Richland County.

ACRONYMS USED IN THIS PLAN

BLM	Bureau of Land Management
CWPP	Community Wildfire Protection Plan
DES	Disaster and Emergency Services
DNRC	Department of Natural Resources and Conservation
FEMA	Federal Emergency Management Agency
FSA	Farm Service Agency (US Department of Agriculture)
FWP	Montana Fish, Wildlife and Parks
MACO	Montana Association of Counties
MDOT	Montana Department of Transportation
MFWP	Montana Fish, Wildlife and Parks
NFIP	National Flood Insurance Program
NFP	National Fire Plan
NOAA	National Oceanic and Atmospheric Administration
PDM	Pre-Disaster Mitigation
USGS	U.S. Geological Survey
WUI	Wildland Urban Interface

CHAPTER 1: INTRODUCTION

Authority

Richland County and the incorporated communities of Fairview and Sidney intend to become disaster resistant by preparing and implementing this Community Wildfire Protection and Pre-Disaster Mitigation Plan (CWPP/PDM). State law (MCA 10-3-401) gives local governments the authority to plan for disasters and emergencies (Jelinski). The plan identifies hazards and mitigation measures to reduce or prevent the effects of those hazards, and raises the awareness about the importance of taking personal and collective (public and private) responsibility for reasonably foreseeable natural disasters. The plan has been prepared utilizing funds from the Bureau of Land Management supplemented by county match. The plan meets the requirements of the National Fire Plan and the Interim Final Rule published in the Federal Register on February 26, 2003, at 44 CFR Part 201 as part of the Disaster Mitigation Act of 2000.

Scope and Plan Organization

This plan is organized into six major chapters plus the crosswalk documentation showing how the plan meets federal requirements for pre-disaster planning.

- Chapter 1. Introduction

This chapter provides background material to put the plan and mitigation strategies into the context of Richland County's unique assets, resources, and hazards.

- Chapter 2. Planning Process

This chapter describes how the plan was developed, including public involvement.

- Chapter 3. Hazard Evaluation and Risk Assessment

This chapter gives information about historical disaster occurrences in the county then lists potential hazards, hazard profiles, critical facilities, and vulnerabilities. Chapter 3 also provides information about asset values, for example, how much the county courthouse, the town hall, or the municipal water treatment plant would cost to replace if it was lost in a disaster.

- Chapter 4. Mitigation Strategy

This chapter takes the hazard information and develops goals, objectives and projects that can be accomplished to lessen the chances and/or severity of a

potential disaster. Recognizing the limitation of resources to accomplish all projects identified, Chapter 6 also provides the local priorities for the projects.

- Chapter 5. Wildfire Protection

This chapter addresses wildland fire issues for the county and comprises the Community Wildfire Protection Plan (CWPP) element of this plan. The current situation with respect to vegetation and fuels, past occurrences of fire, values at risk, and potential losses are described. This chapter also contains goals, objectives, and mitigation actions (projects) that can be done to reduce risk of wildland fire. The projects are prioritized.

- Chapter 6. Plan Maintenance

This chapter describes how the plan is to be maintained and kept current.

Preparation of the Plan

The plan was developed with leadership from Richland County Commissioners and mayors of Fairview and Sidney. Throughout the process, from identifying hazards to developing mitigation measures, public involvement was encouraged at a variety of levels. (Details of public involvement are included in Chapter 2.) Each of the signing entities to the plan, Richland County and the incorporated communities of Sidney and Fairview, participated in the development of the plan through the Steering Committee or via other meetings and phone calls, specifically by providing data, helping to set priorities, and identifying mitigation projects.

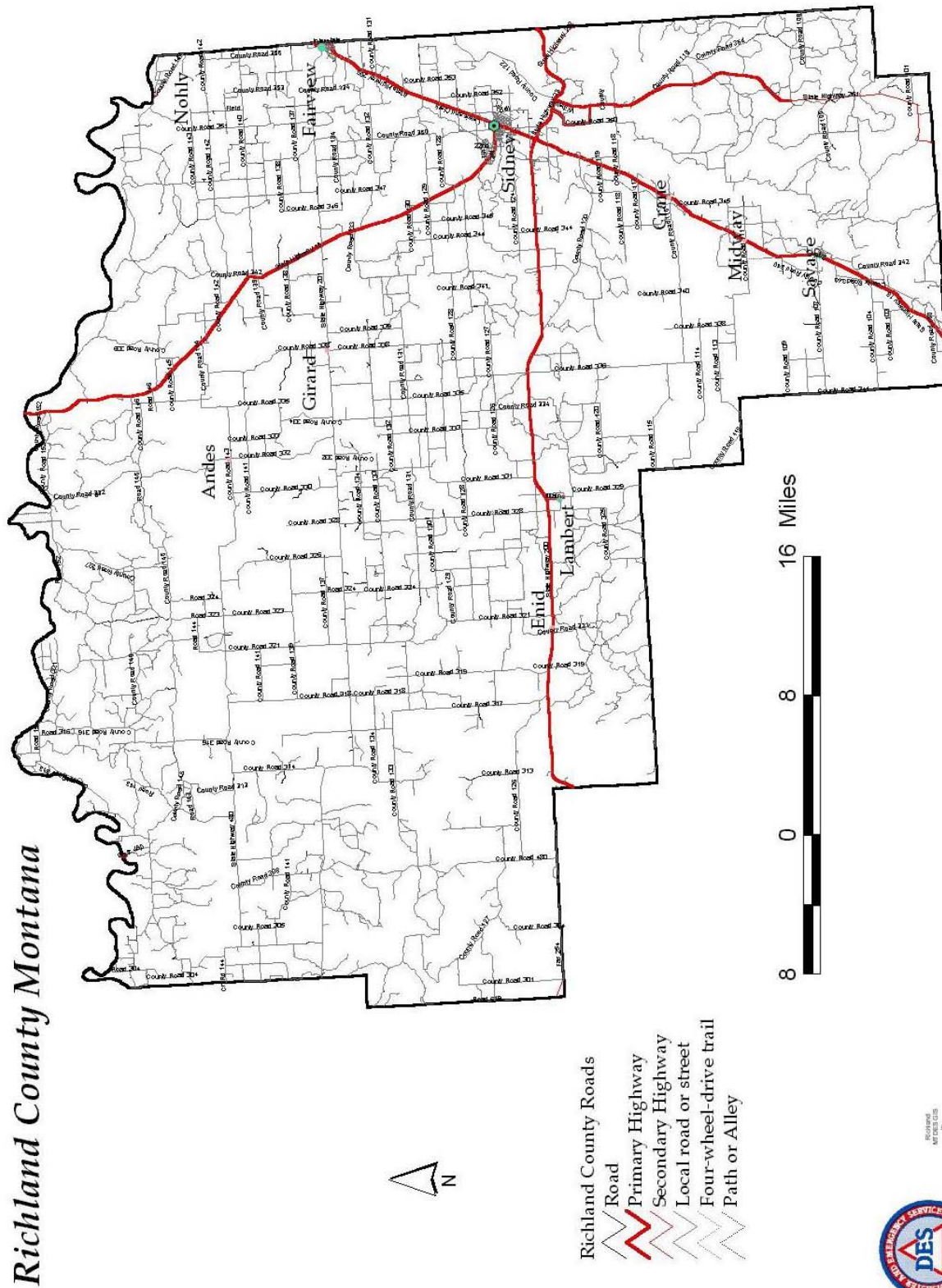
The County hired Cossitt Consulting of Park City, Montana to assist in developing the plan, including writing the plan document. The pre-disaster mitigation section of the plan was prepared by Anne Cossitt, and the community wildfire assessment and mitigation was prepared by Rand Herzberg. County Disaster and Emergency Services Coordinator, Butch Renders, served as the primary contact for the county and assisted in data collection, public involvement, and document review. Fire staff members and volunteers were key in developing the wildfire risk assessment and mitigation. A portion of the photographs utilized in the news releases and the plan, and maps contained in the plan were provided by District IV Disaster and Emergency Services Representative, Norman Parrent.

Project Area Description

General

The project area for this plan is Richland County, Montana, established in 1914 and according to the *Montana Almanac*, was named to bring settlers to the area.

Figure 1.1 Richland County



(*Labor Market Information for Richland County*, Montana Department of Commerce, 2004) Richland County is located in northeastern Montana, south of the Missouri River. It is bordered to the east by North Dakota, to the south by Dawson County and to the east by McCone County.

Richland County encompasses a land area of 2,084 square miles (quickfacts.census.gov). Sidney and Fairview are the incorporated communities in the county, and Sidney is the county seat. Other communities include Savage, Lambert, Crane, and Enid.

Physical Characteristics

Topography in the county is characterized by rolling uplands, large nearly level upland benches and valleys along the rivers. Valley bottoms of the Missouri, Yellowstone, and Redwater Rivers and their larger tributaries can range in width from a few hundred yards to about three miles. Erosion along the valleys has created some areas of steep breaks. Steep areas with little or no grass cover and severe erosion occur in the badland areas along the Missouri River breaks to the north of Sidney and along the east side of the Yellowstone River. (Soil Survey, 1980)

Most of the water for domestic and livestock use comes from deep wells. (Soil Survey, 1980) Water supply for livestock also comes from a variety of impoundments (dams) throughout the county.

Perennial surface water includes the Yellowstone and Missouri Rivers. The Yellowstone River flows from southwest to northeast across the county's eastern portion. The Missouri River forms the northern boundary of the county. The Missouri and Yellowstone Rivers converge approximately 12 miles east of the Richland County-North Dakota border.

The county includes numerous other drainages with intermittent surface water flow. In the west of the county drainages in the Redwater Creek watershed include East Redwater Creek and South Fork of Lisk Creek. The Missouri River drains the northern portion of the county, including the Charlie Creek drainages, Hardscrabble Creek, and Cherry Creek. Major drainages in the Yellowstone River watershed in the east and southeastern portions of the county include Lone Tree Creek (that flows through Sidney), Fox Creek, and Smith Creek.

Mineral resources in Richland County include oil and coal, both of which are being extracted in the county.

Vegetation in the county is primarily grassland and dryland crops, with some scattered areas of woody shrubby vegetation scattered in draws, particularly in the northwest along Big Sheep Mountain Divide and to the south. There is more intensive crop use along the irrigated areas of the Missouri and Yellowstone

Rivers. The Yellowstone and Missouri River bottoms also have areas of cottonwoods and other woody vegetation. (USGS National Landcover Dataset via the Montana Natural Resource Information System-NRIS)

Land Use and Development Trends

Land use in Richland County includes mineral development (coal and oil extraction), agricultural use, as well as residential, commercial and business use. In 2000, population density was 4.6 persons per square mile. Residential development is clustered in the communities of Sidney, Fairview, Savage, Lambert, Crane, and Enid and otherwise consists of scattered homesteads across the county.

The population in Richland County was 9,667 in the year 2000. Nearly half of all county residents (49%) lived in the town of Sidney. Table 1 shows population in 2000, and change from 1990. In each of the incorporated communities and in the county, there was an overall decline in population between 1990 and 2000.

Since 2000, however, there has been increased oil production activity and the populations are on the rise. In fact, population increases are beginning to strain housing availability, despite annexations to the city limits over time that have increased the geographic size of the town and provided more residential housing areas. Many new workers coming into the county are living in company-provided trailers. (Bret Smelser, Sidney Mayor) Housing can be difficult to find in Fairview (Meeting with town officials in February 2005).

New development in Sidney is likely to occur in the northwest portion of the town, which was the area of the city's most recent annexation. Fairview has not annexed recently, but the newer development is on the fringes of the town.

Table 1.1 Population and Housing Units in Richland County, Sidney, and Fairview in 2000

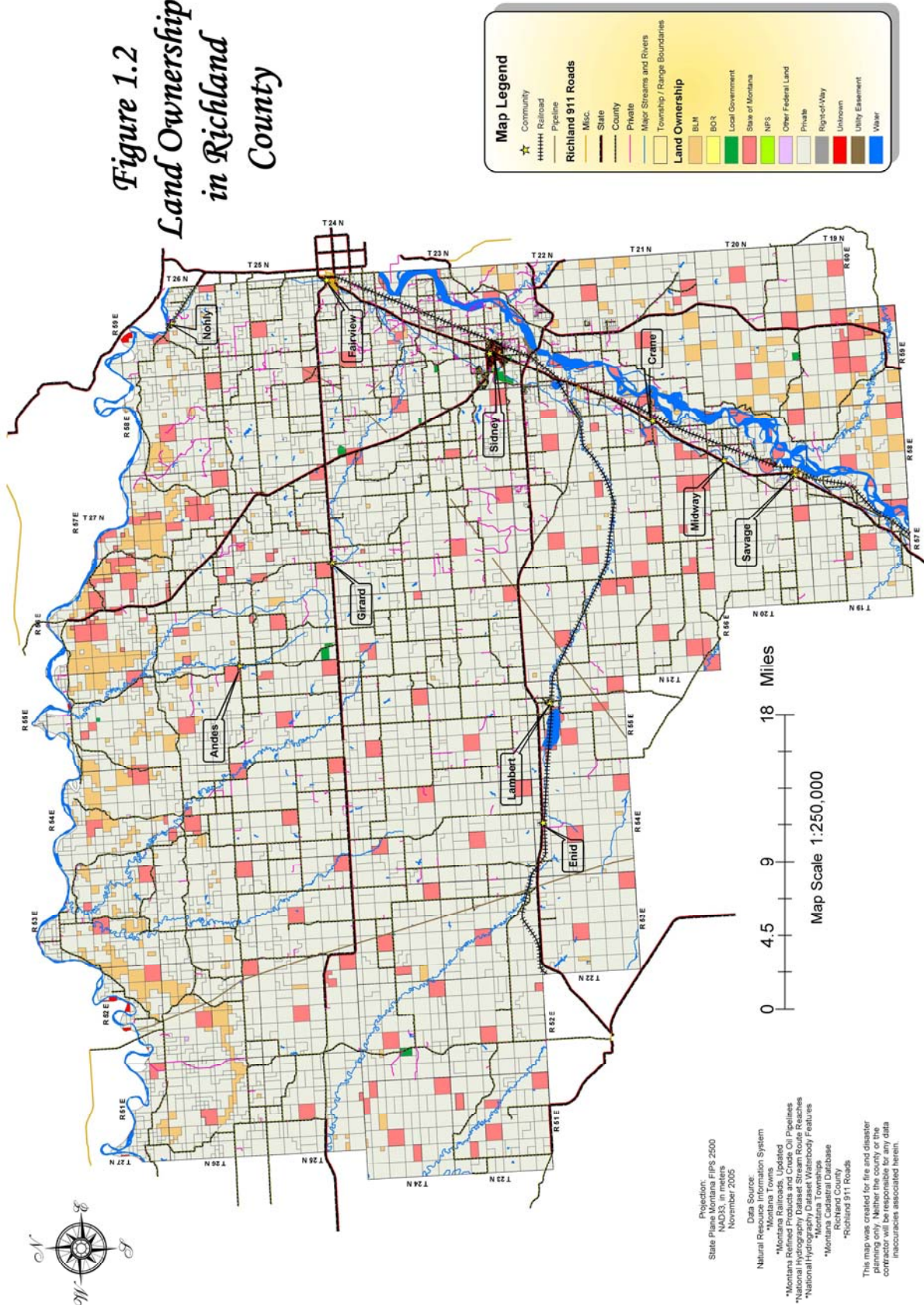
	Fairview	Sidney	Richland County
Population in 2000	709	4,774	9,667
Change from 1990	-18%	-8%	-10%
Housing Units in 2000	390	2,393	4,557

Source: U.S. Census Bureau, Table DP-1.

In 2001, there were 393 private non-farm business establishments with paid employees (quickfacts.census.gov). Most of these are located around the communities, but there are some also scattered through the county (e.g., the Westmoreland coal mine west of Savage).

According to the 2004 Montana Agricultural Statistics, a total of 1,201,436 acres were in production on 587 farms in Richland County in the year 2002. Between 1997 and 2002, the total number of farms decreased (from 611 in 1997) and land

Figure 1.2
Land Ownership
in Richland
County



in farm production increased (from 1,197,842 acres in 1997). Agricultural production in the county includes sugar beets, grains, oilseeds, cattle, and sheep (*Labor Market Information for Richland County*, Montana Department of Commerce, 2004). Richland County ranked 13th in wheat production in 2002, 1st in oats in 2002, and 1st in sugar beet production (with more than 410,000 tons in 2003) among the 56 counties in Montana. (2004 Montana Agricultural Statistics)

There are approximately 46,300 acres under irrigation in the county, much of which is along the Yellowstone River. The dam at Intake in Dawson County, diverts water into the Lower Yellowstone Project Canal that serves the west side of the river valley. The State Water Resources Board project irrigates land on the east side of the river. Privately-owned pumping systems furnish water for several thousand more acres on the east side of the Yellowstone River and also along the south side of the Missouri River. (Soil Survey, 1980)

Land ownership in the county is predominately private. Public land ownership includes scattered state sections throughout the county (generally two sections in each township), and approximately 55,000 acres of federal lands managed by the Bureau of Land Management (Soil Survey, 1980). The BLM-managed lands are generally in the northern portion of the county.

Based on historic trends, the county could expect future land use development that is predominately agricultural. Oil and gas development is currently on the upswing, but will likely slow when the field is fully developed, or as affected by markets, as has happened in other boom-bust cycles.

Future residential development is likely to be similar to existing, although there is potential for the number of residences in rural areas to increase, based on trends across Montana for year-round and seasonal residences close to recreational amenities such as water and hunting opportunities.

Richland County has a comprehensive plan, but is in the process of working to get the plan updated to meet current state law. Fairview does not have a comprehensive plan. Sidney has a comprehensive plan, prepared in the 1980s and is also working to update the plan to meet current state law and to address issues of rapid growth related to oil and gas development. Counties and municipal jurisdictions in Montana are responsible for local subdivision and floodplain regulations.

Transportation

Public road systems in Richland County consist of the state highways and county roads. All of the state highways are two-lane. Highway 16 follows the Yellowstone River Valley from Glendive to Sidney where it veers to the north and west to intersect Highway 2 north of the Missouri River at Culbertson. the North Dakota border east of Fairview. Highway 200 extends east from Richey in

Dawson County (and points further west) through Lambert and Enid, to Sidney, where it follows the Yellowstone River Valley to the North Dakota border. County and town roads complete the rest of the road system, along with private ranch and farm roads. These roads are predominately east-west, north-south alignments except for areas along the Missouri River

There is a public airport at Sidney with daily commercial air service.

The Lower Yellowstone Railroad operates the former Burlington Northern-Santa Fe Railroad lines across Richland County—up the Yellowstone River Valley, and a spur from Newton Junction south of Sidney west across the county to Richey in Dawson County (Renders, Montana Atlas and Gazetteer).

Economy

The agricultural sector, health care, manufacturing (e.g., sugar beet processing), retail trade, and mining (including oil and gas, and related support industries for both mining and oil and gas) are main forces in the county's private sector economy. Personal income from other non-work related sources (primarily dividends, interest, rent, and transfer receipts such as retirement, disability, and Medicare and Medicaid payments) is a growing component of total personal income in Richland County.

Oil development just outside of Sidney



Photo from Cossitt Consulting

In 2002, Richland County had a per capita income of \$23,590 (ranking it 15th in the state), and total personal income of \$218,513,000. Total personal income includes net earnings by place of residence; dividends, interest, and rent; and personal current transfer receipts (including retirement, disability, and Medicare and Medicaid payments). From 1992 to 2002 net earnings increased on average 2.2 percent each year; dividends, interest, and rent increased on average 2.6

percent; and personal current transfer receipts increased on average 4.1 percent. Of the total personal income in the county, 41% came from dividends, interest, rent, and transfer payments. (Bureau of Economic Analysis "Bearfacts" webpage, and Table CA05, www.bea.gov/bea)

Personal income from earnings (income that does not come from dividends, interest, rent or transfer receipts) totaled \$148.7 million of which 5% was farm earnings, and 95% was non-farm. Of non-farm earnings, private earnings comprised 80% and government work comprised 20%. (Bureau of Economic Analysis, Table CA05)

Richland County ranked 7th among the 56 counties in Montana for agricultural cash receipts (2004 Montana Agricultural Statistics), with total cash receipts of \$64 million. (Montana Agricultural Statistics 2004)

In March of 2002, there were 339 business establishments in Richland County with a total annual payroll of \$67.7 million. The industry sectors with the highest annual payroll were healthcare (30 establishments with \$12 million in annual payroll), manufacturing (10 establishments, including the sugar beet processing facility, with \$10.9 million in annual payroll), retail trade (67 establishments with \$8.4 million in annual payroll), and mining (19 establishments including oil and gas and coal mining, and support industries such as drilling, and \$7.3 million in annual payroll). (2002 County Business Patterns, <http://censtats.census.gov>)

Based on the 2000 census data, there were 4,465 persons employed in the county. Private wage and salary workers comprised 71%, government workers 16%, and self-employed workers 12%. Unpaid family workers made up the balance (1%). (U.S. Bureau of the Census, Table DP-3)

Climate and Weather

Richland County is located east of the Continental Divide and subject to continental weather patterns. In general summers are hotter, winters are colder, precipitation is less evenly distributed, skies are sunnier, and winds are stronger than on the west side of the divide. (Western Regional Climate Center, Climate of Montana)

Average maximum and minimum temperatures recorded at four locations in Richland County indicate that average monthly minimum temperatures can range from as low as -4 degrees (January-Lambert) to average maximum temperatures of 87degrees (July-Savage). Table 2 shows the monthly averages for Sidney.

Table 1.2 Average Temperatures 1910-2002

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>Ann</i>
Ave max	23	30	41	58	70	78	85	84	72	60	41	28	56
Ave min	0	7	17	30	41	50	55	53	72	32	19	7	30

Notes: Temperatures are from the Sidney weather station location. Temperatures have been rounded to nearest 1 degree Fahrenheit.

Source: Western Regional Climate Center Period of Record Monthly Climate Summary (wrcc.dri.edu)

Richland County has average annual precipitation ranging from 13-14 inches per year, as shown in Figure 1.3. (Western Regional Climate Center) The drier areas of the county are in the central and western portions, away from the Missouri and Yellowstone River Valleys. Most of the county averaged between 12-14 inches per year between 1961 and 1990. (Montana Natural Resource Information System, Map of Average Annual Precipitation 1961-1990)

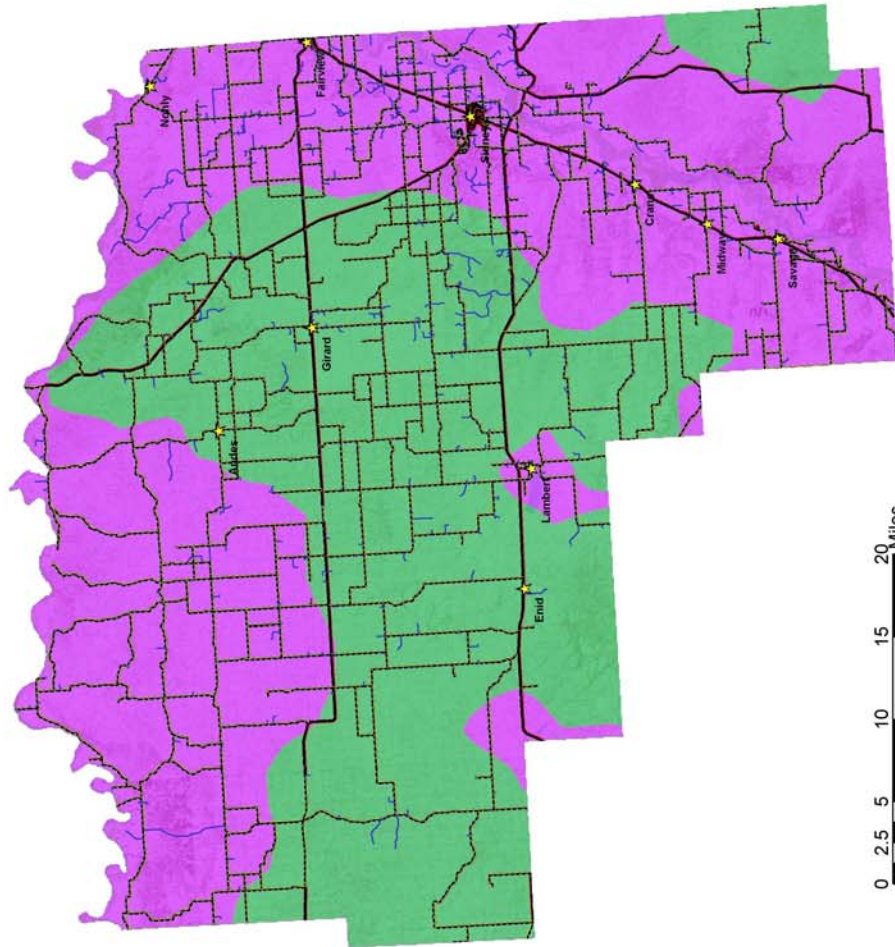
Average annual snowfall is 33 inches (as measured in Sidney). The largest amount of snow received in one year was 69 inches in Sidney in 1975.

Winds are generally stronger and more frequent in spring when winds average more than 20 miles per hour about 15 percent of the time. The strongest winds generally come from the west. (Soils Survey, 1980).

Extreme weather in the county can include storms with hail, lightning, and strong winds and winter storms with ice, snow, cold temperatures, and strong winds. Weather events are covered in more detail in Chapter 3.



Figure 1.3
Richland
County
Precipitation



Map Scale 1:400,000

Map Legend

☆ Community

Richland 911 Roads

Misc. — State — County — Private

Annual Precipitation

12-14 Inches

14-16 Inches

Projection:
State Plane Montana FIPS 2500
NAD83, in meters
November 2005

Data Source:
Natural Resource Information System
*Montana Towns
*Montana 1:24,000 scale Quadrangles
*Montana Average Annual Precipitation, 1961-1990
Richland County
*Richland 911 Roads

This map was created for fire and disaster planning only. Neither the county or the contractor will be responsible for any data inaccuracies associated herein.

Sources:

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- U.S. Department of Agriculture. Soil Conservation Service. *Soil Survey of Richland County, Montana*. 1980
- U.S. Department of Commerce. Bureau of Economic Analysis. "Bearfacts" webpage, and Table CA05, www.bea.gov/bea
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CHAPTER 2: PLANNING PROCESS

This chapter describes:

- The overall approach to developing the plan
- The plan process, including:
 - Who was involved in the planning process and how they were involved
 - Efforts to involve the general public
 - Efforts to involve various interests including government, business, education, and others

Supporting documents at the end of this chapter include:

- Meeting agendas
- Meeting summaries
- Meeting sign-in sheets
- Flyers and News Releases
- Correspondence

Overall Approach and Philosophy

The development of this plan was based on the premise that plans with the greatest likelihood of being implemented are those with local momentum, where individuals in the groups in the community(ies) are actively involved and have a stake in accomplishing goals and specific projects.

From the start it was important that any and all interested individuals be offered the opportunity to participate. Special efforts were made to invite persons representing a wide variety of interests that could be affected by disasters or that play a role in disaster response. It was recognized that a number of individuals were critical resources to the process by virtue of their knowledge and expertise. The process sought to engage both these knowledgeable individuals and the general public.

Many individuals committed considerable amounts of personal time to the development of this plan. Without their involvement, this document would not have been possible.

Process

The process used to develop this plan was geared toward developing a PDM plan as well as a Community Wildfire Protection Plan. Because wildfire is one of the significant hazards in Richland County, these two planning efforts dovetailed

smoothly into the process that developed this document. The following describes the general process used for the PDM Plan. More detail on the process for the Community Wildfire Protection Plan is provided in Chapter 5.

There were several key participants in the process:

- County Commissioners—initiated the effort, participated in steering committee, and approved the plan on October 31, 2005
- Incorporated communities of Sidney and Fairview—participated in the planning effort and approved the plan in November and December 2005
- Steering Committee—functioned as the planning committee (see detailed description below under “Public Involvement and Outreach”)
- General Public—encouraged to participate, attend steering committee meetings, stay informed (See more under “Public Involvement and Outreach”)
- County DES Coordinator—lead staff person in the county for coordinating with the contractor and liaison for local expertise
- Consulting Team—provided the staffing to research and write the report, facilitating discussion at meetings leading to hazard evaluation and risk assessment, mitigation measures (goals, objectives, projects)
- Technical Experts and Others. A number of individuals were contacted for information and were extremely responsive and helpful. These included the following:
 - Steering Committee Members
 - Local Government officials and staff
 - Business and nonprofit institutions
 - Norman Parrent, Montana DES District IV Representative
 - Tanja Fransen, National Weather Service-Glasgow Office

There were four basic elements of plan development:

1. Getting Started - Understanding the Purpose and Need for the Plan
2. Public Involvement and Outreach
3. Document Development and Review
4. Plan Approval

The process for each of these elements is described in more detail below.

Understanding the Purpose and Need for the Plan-Getting Started

The Richland County Commissioners initiated the efforts to develop a PDM plan and already had a good understanding of the need for such a plan. Work had begun a year or two earlier when the County DES Coordinator had attended training workshops. In December 2004, Richland County Commissioners, in

coordination with four other adjacent counties, hired contracted technical assistance from Cossitt Consulting to complete the PDM and prepare a Community Wildfire Protection Plan. Anne Cossitt was the lead contract staff for Richland County on the PDM portion and Rand Herzberg was the lead contract staff for the Community Wildfire Protection Plan.

Cossitt Consulting team members Anne Cossitt and Barb Beck met with the County Commissioners in early January 2005 to review purpose and approach to the plan, identify how best to involve various interests and the general public, and to finalize the schedule and products. The agenda and meeting notes for that meeting are included in this chapter.

January Meeting with County Commissioners



Soon after that meeting the County Commissioners sent letters to dozens of individuals inviting them to participate on the Steering Committee. Information about the basic need for the plan was included in that letter and was reviewed at each Steering Committee Meeting.

The Mayors of Sidney and Fairview received an invitation letter from the County Commissioners and a follow-up letter from Anne Cossitt. In February, Ms. Cossitt also met with the Mayor and Public Works Director of Sidney and had a meeting with Fairview Mayor, town council, and other representatives of the town of Fairview.

Richland County already has considerable experience in disaster and emergency response. At the onset of the work by Cossitt Consulting there was already an active Local Emergency Planning Committee (LEPC) with diverse participation.

Public Involvement and Outreach

Efforts to include and inform the public included Steering Committee participation and public outreach via meeting announcements and general information.

Steering Committee

The Steering Committee functioned as a planning committee and guided the work of the consultant. The role of the Steering Committee was to represent a wide range of interests, serve as a technical resource, guide the planning process, and finally, review the draft document for accuracy and completeness.

The County Commissioners sent invitations to the following individuals to participate on the Steering Committee. The intent was to start with persons already participating on the LEPC and to encourage participation from business interests, utilities, health care, education, transportation infrastructure, news media, law enforcement, and local, state, and federal government. Lists of who attended each meeting are included at the end of this chapter.

Invited to participate on the Steering Committee:

Deb Anderson	CERT
Steve Arnold	Sidney Sugars
Brad Baisch	County Sheriff
Amy Busch	RSVP
Lyle Carlson	Public Works
Jackie Couture	USDA Research Center
Tony Barone	Eastern Plain RC&D
Dwayne Buerbe	Montana Highway Patrol
Bryan Cummins	Fairview Mayor
Mark Delany	Sidney Health Center
Tim Denowh	Fairview Fire Department
Frank DiFonzo	Sidney Police Department
Con Donovan	Previous DES Coordinator
Brenda Eberling	Sidney Health Center
Dan Farr	Chamber of Commerce
Darrell Finsaas	Williston Basin Interstate Pipeline
Ron Gebhardt	Lambert Public School
Rob Gilbert	Sidney Fire Department
Bill Green	Sidney Insurance
Marcie Hamburg	County Planner
Rick Haraldson	Sidney Health Center
Nancy Heins	FSA
Kathy Helmuth	Public Health Nurse
Craig Herbert	Lewis and Clark Electric Generating Station
Russ Huotari	County Public Works

David Jacobson	Busch Agricultural Resources, Inc.
Dick Jensen	ROI, Inc.
Mike Jensen	MT Army National Guard
Marvin Johnson	Richland County Coroner, Sheriff's Office
Kelly Knaff	Lower Yellowstone Rural Electric
Judy LaPan	Richland County Health Department
Ben Larson	County Extension Agent
Brian Ligon	Lambert Fire Department
Kelly Logan	County Sanitarian
J. Tom Lowe	BNSF Railway
Terry Meldahl	Sidney Public Works
John McNeil	Savage Public School
Leslie Messer	Richland Economic Development
Bink Miller	Westmoreland Savage Mine
Denny Palmer	Richland County Sheriff's Office
Shelly Rosaaen	COA
Herb Schmierer	Richland County Road Department
Jami Selting	NRCS
Tom Shanower	Eastern Plain RC&D
Bret Smelser	Sidney Mayor
Jim Solberg	Bear Paw Energy
John Stanford	BNSF
George Swenson	Blue Cross Insurance
Superintendent	Sidney High School
Superintendent	Fairview Public School
Superintendent	Sidney Middle School
Superintendent	Central Elementary
Superintendent	County Superintendent of Schools
Marshall Vojacek	Savage Fire Department
Ken Volk	Sidney Fire Department
Wade Whiteman	County Extension Agent
	Franz Construction
	Montana Dakota Utilities

The Steering Committee met three times. At the first meeting, participants identified and prioritized hazards. At the second meeting, the committee worked on drafting goals. At the third meeting, participants identified and prioritized projects.

Meetings were facilitated by the planning consultant according to an agenda developed prior to each meeting. Each meeting began with introductions and an explanation of the purpose of the plan and planning process. Anyone who attended a meeting, whether they had been formally invited or had learned of the meeting through news articles or other means, was welcome to participate and

comment. Following each meeting, a meeting summary was prepared, copies of which are provided later in this chapter.

Public Outreach and Information

Public outreach began immediately following the consultant meeting with the county commissioners in January 2005. A news release summarizing that meeting and announcing the commencement of the plan process was sent to the *Sidney Herald* and the *Roundup*.

Notices of each steering committee meeting were sent to both newspapers as one or more articles. Articles explained the purpose of the meetings, planning schedule, topic for upcoming meetings, and provided contact information. Following the meetings, news releases were sent to the papers on the meeting results, and identifying next meeting date/time/location, and other next steps. Printed articles are included at the end of this chapter. Also included are flyers that were posted in various locations around the county as well as notices sent to steering committee members.

Notice of the availability of the draft plan for public review was also posted in the paper along with comment deadlines.

Document Development and Review

The Cossitt Consulting team prepared the plan document, starting with elements identified at the various meetings. A detailed description of the methodology for the hazard evaluation and risk assessment for the PDM is included in Chapter 3. That chapter also discusses the review and incorporation of existing plans, studies, reports, and technical information. Participants were asked to identify information sources, including existing plans, maps, and other resources at the kick-off meeting with commissioners, and at the first steering committee meeting. Methodology for specific sections of the Community Wildfire Protection Plan is included in Chapter 5.

Drafts of plan chapters were submitted to the County DES Coordinator for review as they were completed. Following the third Steering Committee meeting, a draft of the entire document was assembled and provided to the county for public review. The draft document was made available in the offices of the incorporated communities of Sidney and Fairview, Richland County, and the Richland County library, and upon request. The comment period was open for 30 days until October 13, 2005.

Comments were sent to the County DES Coordinator and subsequently incorporated into the final document by the contractor.

Plan Approval

Following incorporation of the comments received, the plan was finalized. Resolutions were prepared for Fairview, Sidney, and Richland County for adoption and approval of the plan. These signed resolutions can be found on the first pages of this plan.

Meeting Agendas

**Richland County CWPP/PDM Plan
Kick-Off Meeting Agenda
January 5, 2005
(2 hours)**

Introductions

What is a PDM Plan, why do one, and what is the planning process?

Quick overview by planning consultant

Review of contract deliverables

Discuss any county or contractor concerns

Coordination

Meeting logistics

Meeting scheduling considerations

Working with the Steering Committee

Communications during the project

Getting to work!

Recollections of past natural disasters

What hazards are of most concern to you?

Information sources (local or county plans, maps, knowledgeable individuals, county records, etc.)

Media contacts

Develop list of potential Steering Committee members

Set first public meeting date, time, and location

Exchange contact information

Other items

Richland County CWPP/PDM Steering Committee
February 7, 2005 7 p.m.
Meeting Agenda

Introductions

Community Wildfire and Pre-Disaster Mitigation Planning

- What is a CWPP/PDM Plan and why do one?
- What is the role of the Steering Committee?
- What are the overall timeframes and schedule for the project?

Recollections

- Steering Committee recollections of past natural disasters in the county (what, when, and where)
- Other resources to obtain this/related information?

Potential natural disasters

- Group brainstorm of natural hazards
- Prioritize list of potential disasters
- Hazard Rating Sheet

Critical facilities and vulnerable populations

- What are the critical facilities and infrastructure?
- What are the vulnerable populations?

Wrap-up

- Next steps
- Next meeting date/location/time
- Questions and comments
- Adjourn

**RICHLAND COUNTY
CWPP/Pre-Disaster Mitigation Plan
Steering Committee/Public Meeting Agenda
April 25, 2005**

- **Welcome and introductions**
- **Recap:**
 - Why do a CWPP/PDM Plan?
 - What is in the plan?
- **Discussion and products of first meeting**
 - Risk evaluation and hazard assessment
- **Develop goal statements**
- **Develop preliminary list of projects**
- **Wrap-up**
 - Comments/questions on meeting
 - Review schedule
 - Next steps, next meeting

RICHLAND COUNTY CWPP/PDM PLAN
Steering Committee/Public Meeting Agenda
May 23, 2005

Welcome/introductions

Quick Review

- Purpose of PDM Plan
- Where we are in the planning process
- Tonight's tasks

Goals and Objectives

- Goals statements, objectives
- Review preliminary list of projects identified at last meeting
- Review preliminary list of fire projects

Project identification

- List additional project ideas under the objectives

Project Prioritization

- Prioritize all projects in high, medium, and low bands

Wrap-up

- Schedule for finalizing the plan
- Where to find copies
- How to comment
- Thank you for your participation!

Meeting Summaries

**CWPP-PDM Kick-Off Meeting in Richland County
January 5, 2005**

Attending:

Commissioners:

Don Stepler

Mark Rehbein

Henry Johnson

Penni D. Lewis, County Clerk and Recorder

Butch Renders, Richland County DES Coordinator

Norman Parrent, Montana DES Regional Representative

Barb Beck, Beck Consulting

Anne Cossitt, Cossitt Consulting

Introductions

Cossitt and Beck introduced themselves as contractors for this project. Cossitt will be the primary contact for the consulting team for work on Richland County.

What is a CWPP-PDM Plan and Why Do One?

Anne Cossitt reviewed what a CWPP-PDM plan is and why preparing this plan will benefit the county. Cossitt explained that the plan would address the current situation, past disasters, and develop goals and projects. Once the plan is completed the county will be eligible to compete for funds to complete projects.

Date-Time-Location of First Steering Committee Meeting

Butch will get back to Anne Cossitt to confirm date, time, and location but the first meeting was tentatively set at Monday, February 7 at 7:00 p.m. in Sidney in the basement of the library. Sidney and Fairview are the incorporated communities in the county. Savage and Lambert are two other communities, not incorporated, where it would also be good to hold meetings in the future.

It was noted by the Commissioners that the BLM is holding another meeting on February 9. That meeting is for the update of the BLM Resource Management Area Plan.

Steering Committee—Invitations to Participate

Participants brainstormed names and groups to be invited to participate.

Communications and Roles

- Anne Cossitt:

- will be the primary consultant staff contact for Richland County on PDM Planning issues.
- Obtain the meeting schedule for the BLM Resource Management Plan (RMP) process. Talk to BLM staff to ensure that BLM staff running the RMP meetings are aware of the concurrent effort to develop the CWPP and PDM plans in these counties.
- Butch Renders:
 - Will clip all newspaper articles and notices and send to Cossitt
 - Will be the primary contact for Richland County for Cossitt
 - Will pull together all the contact information (addresses, phone numbers, etc.) for the invitation list for the steering committee
 - Will get the invitation letters signed by the commissioners and mailed out
 - Will arrange for the meeting space, confirm availability, and arrange for refreshments
- County Commissioners
 - Will talk to mayors about this effort when they see them

Hazards-Recollections of Past Disasters

- CRP lands can be a fire hazard unless fuels are reduced through grazing or mowing
- November 2000—horrible ice storm and blizzard
- Oct 1999—the big fire on Halloween, whipped to a frenzy by wind storms
- 1991, 1997—major flooding
- 2001—Ice jams on Lone Tree Creek (?) in Sidney took out the 9th Avenue Bridge
- Date (?)—a dam on the creek that flows through Sidney blew out (originally built for flood control).
- 4 major floods have occurred in Sidney
- Wind storms
- Drought—County has a drought committee
- Small stream flooding (rather than flooding on the Missouri and Yellowstone Rivers) has been the major flooding problem in the county

Resources

County has a land ownership atlas (at clerk and recorder's)
All roads have been recorded with GPS

Tour of Sidney Area

After the meeting, Butch Renders provided a brief tour of the Sidney area.
Commissioners did not attend.

Points from the tour included:

- Past Disaster Mitigation Projects
 - REA—Ice storm disaster mitigation (including “struts” to keep wires from touching during wind storms)
 - Brush removal in Lone Tree Creek
- Oil wells in the area can produce “sour” gas
- The railroad often has many cars with propane or other liquid fuels that are stored right in town—serious, potential issue for fire hazards

**Meeting Summary
Richland County PDM-CWPP Steering Committee
Richland County Library, Sidney
February 7, 2005**

Welcome

Butch Renders, County DES Coordinator, welcomed the group and introduced Anne Cossitt, who gave an overview of the meeting agenda. Cossitt also introduced Cossitt Consulting team member Rand Herzberg, who will be working on the Community Wildfire Protection Plan (CWPP) portion of the plan. Participants introduced themselves.

What is a CWPP-PDM Plan?

Cossitt presented the benefits of preparing a county CWPP- Pre-Disaster Mitigation (PDM) Plan and generally what goes into the plan. The resulting plan will among other things identify projects which can be done to make the county more disaster-resistant. She explained that PDM process focuses on all types of natural disasters in the county and that more depth would be added through the CWPP process. Fire department staff will be working as a core team with Rand Herzberg on details of wildfire issues.

Participants in the Planning Process

Cossitt discussed role and membership of the Steering Committee. The steering committee provides information and ideas, sets priorities and will be asked to review the draft plan. The steering committee is made up of emergency service providers, businesses, education (schools), medical providers, agricultural services, insurance providers, and others to get a broad scope of sectors that could be affected by disasters. County commissioners and mayors and town councils are also involved as they will adopt the final product. The entire process is open to the public. Cossitt Consulting team members Anne Cossitt and Rand Herzberg will research and write the plan with Anne taking primary responsibility for the PDM portion and Rand taking the CWPP tasks.

Time Frames and Schedule

The plan will be completed and adopted by the county, and the two incorporated communities by December 31, 2005. Future meetings will be dedicated to goal setting and project identification. Potential projects will be prioritized by the Steering Committee and the public.

Recollections of Past Disasters

Cossitt asked participants to provide information on previous disasters. This information will be checked against other records as part of the historical disaster write-up of the plan.

Type	Where	Notes	When
Wildfire	Across Wibaux, Dawson, and Richland counties	BLM-information source for fire	Memorial Day weekend-1980
Wildfire	Across county	Wind-driven event	Halloween 1999
Winter Storms	Western part of Richland County	REA-source of information	Jan 29-30, 2004
Winter Storm	County-wide	Roads in county closed for as much as 3 days	Feb 1999
Winter Storm	County-wide		1978-79
Hail	County-wide	Crop and property damage	1991-93
Tornado	Savage	Took roof off elevator	July 4, 2004
Tornado	7 miles west of Elmdale	Took out home	1955
Hazardous Chlorine Leaks airborne from swimming pool	Sidney		?
Sulfuric gas events	Fairview		?
Flood	Sidney-Lone Tree Creek	Dams washed out—took out bridges	1951
Flood-Ice jams	Yellowstone River		1979, 2002
Hazardous-Meth Houses	County-wide		Ongoing
Drought	County-wide		Ongoing
Flood	County-wide	Richland County Public Works for more info	1996
Hazardous Materials spills	County-wide—on highways	Misc. hazardous spills	Various
Pipeline blow-ups and leaks	County-wide		Various
Pipeline Rupture	North of Lambert		1980s
H ₂ S	?	2 deaths, 6-9 injuries	1981
Farming equipment accidents	County-wide		Ongoing

Hazards of Concern

Participants brainstormed a list of potential hazards that included the following:

- Fire
- Flood
- Winter Storms
- Wind Storms
- Drought

The group then discussed which constituted the priorities—and it was clear that fire and drought were considered that absolute top priorities, followed by winter storms and flood. Winter storms were identified as having some of the greatest potential for human safety factors because of power loss and travel issues associated with winter storms.

Attendees completed worksheets ranking the history, probability, and potential consequences of various hazards. The results were tallied as follows:

Tally for all Participants- Hazard Worksheet

<i>Type</i>	<i>History</i>	<i>Probability</i>	<i>Consequences</i>
Drought	Low Mod High 4 15	Low Mod High 2 2 15	Low Mod High 3 8 9
Flood	Low Mod High 2 15 4	Low Mod High 8 13	Low Mod High 8 12 2
Tornado	Low Mod High 10 8 3	Low Mod High 10 11	Low Mod High 10 8 1
Wildfire	Low Mod High 2 5 14	Low Mod High 1 9 11	Low Mod High 2 12 6
Wind Storm/Hail	Low Mod High 9 11	Low Mod High 2 11 7	Low Mod High 3 10 7
Winter storm	Low Mod High 2 7 13	Low Mod High 1 13 7	Low Mod High 6 10 5

Note: N = 21, but not all participants filled out each box.

How to rate history

Low = 0-1 major incidents in the last 100 years

Moderate = 2-3 major incidents in the last 100 years

High = 4 or more major incidents in the last 100 years

How to rate probability

Low = 0-1 major incidents in a 5-year period

Moderate = 2-9 incidents in a 5-year period

High = 10 or more incidents in a 5-year period

How to rate consequences (an average event, not the worst case)

Low = no serious injury or loss of human life, damage is less than \$500,000.

Moderate = Loss of human life and/or damage between \$500,000 and \$3 million.

High = Multiple lives lost and/or damage greater than \$3 million.

Critical Facilities

Participants were asked to identify “critical facilities,” facilities that could affect the response to disasters or that would create major effects if they were incapacitated from a disaster.

- Hospitals
- Senior care facilities
- Water/Sewer systems
- MDU Plant
- Schools
- Roads/Bridges
- Irrigation Systems
- Water supply (note that the groundwater source and potential depletion/relationship to drought was mentioned)

Vulnerable Populations

The group then identified populations that would be vulnerable in the event of a natural disaster.

- People at risk medically
- Homebound
- Schools
- Day care facilities (2 centers)
- Small isolated communities
- Senior care/Assisted Living facilities (1-Savage, 1-Fairview, 2-Sidney)
- Low Income persons (who may not have transportation)
- Emergency service providers (too often these people wear many hats—one person may serve on both the EMT and volunteer fire department—if there is a major disaster, there may not be enough people to go around. In addition, many of the hospital/medical care staff do not live near the facility they work at—bad weather and roads can really cause shortages in manpower during emergency/disaster situations)

Wrap-Up

Cossitt and Butch Renders thanked everyone for their participation and ideas. The next meeting was scheduled for April 25th, 7:00 pm, in the basement of the public library. Notices will be put in the newspapers. Cossitt will also try to send out advance notices to steering committee members via email.

Richland County PDM-CWPP
Meeting with Town of Sidney Officials
February 8, 2005

Notes prepared by Anne Cossitt

Present:

Brett Smelser, Mayor
Terry Mehdahl, Public Works Director
Butch Renders, County DES Coordinator
Anne Cossitt, Consultant
Rand Herzberg, Consultant

Past Disasters/Other Concerns

- Would be good to get highway traffic routed around town—potential for haz mat problems
- In 1955, the Vaux Dam broke; concern is that since the dam was never replaced, there is no flood control upstream of Sidney
- Lone Tree Creek is getting overgrown—that brushy growth will impede flow and could cause flooding—the Creek needs to be debrushed and cleaned
- There hasn't been any major event along Lone Tree Creek since the 9th Avenue Bridge was taken out.
- The sewer line across Lone Tree Creek has been a problem. At one point it was 6 feet underground, but with scouring action from the 1991 flood in particular, the pipe is now about 6 feet above ground
- There is one 36 inch storm drain pipe that crosses under the railroad tracks—it drains the whole town—probably need a 60 inch pipe to really accommodate major flows. There isn't a whole lot of development in that area, but storm drainage in the past has flooded some basements and it has pushed up the groundwater. When it ices up, then it can be a real problem as it can jam the flow entirely.
- Sewer lagoon is quite close to the river. Used to be about 150 feet from the river's edge, but changing flow over time, has now reduced that to about 50 feet. It would cost about \$20 million to replace the sewer.
- Over the next 5 to 10 years there will probably be somewhere between 200 and 500 wells. They punched 100 wells in the last year or so—about 3 to 5 wells per week. This is really increasing the population—which is not reflected in the census data or annual estimates. The estimates are based on trends from the 2000 census, but the population “boom” started after that.
- The power to run the water and sewer system is about at maximum capacity. MDU is concerned about a “brown out” and expressed a need to pull in another line. Sidney is fed by one line only—so when it goes down, that's it.

- The industrial area on the east side of the tracks has no water. So you have to bring water across the tracks to put out a fire.
- Water capacity. 1.2 million gallons of storage, 6 wells. On a winter day, use about 600,000 gallons per day. In the summer use about 3 million gallons per day.

Priorities to address:

- Lone Tree Creek
- Sewage lagoons so close to the river

Richland County PDM-CWPP
Meeting with Town of Fairview Officials
February 8, 2005

Notes prepared by Anne Cossitt

Present

See attached sign-in sheets.

Past Disasters/Other Concerns

- Storm drainage is pretty good. Have a flume that goes beneath the canal to carry water from the hills past the canal. There isn't much of a storm drainage system, but there haven't really been any problems.
- Snow storms can get pretty bad here—sometimes can't even get around town.
- Town has been without power for a few hours at a time.
- The canal has some potential for wash-outs.
- Hailstorms
- Might be a good idea to fence the town's water supply tank—to prevent problems with vandalism.
- The water supply is sufficient for about 3 days if power were cut off so that no water could be pumped.
- The sewage system has a back-up power supply.
- The Fire Department has a siren/warning system.
- Trains go through at a pretty slow rate of speed. But there is the potential problem of spills—like the anhydrous ammonia problem they had in North Dakota.
- Ambulance and fire departments are all volunteer.
- Need to consider where an Emergency Operations Center might go in town.
- Some people were without power near Bainville for about 2 weeks.

Meeting Summary
Richland County PDM-CWPP Steering Committee
Richland County Library, Sidney
April 25, 2005

Welcome

Butch Renders, County DES Coordinator, welcomed the group and introduced Anne Cossitt, who gave an overview of the meeting agenda, reviewed the purpose and content of a Pre-Disaster Mitigation Plan and Community Wildfire Protection Plan.

Key Issues for Richland County

Cossitt reviewed the issues that the group had reviewed and prioritized at the last meeting, noting that wildfire was being addressed with a separate planning group.

Cossitt also provided a quick overview of some of the research on the issues to date.

Goal Statements

Minimize the economic impacts of drought.

Suggested projects:

- Develop baseline information on water supply and water use in Richland County as part of developing an understanding of the current water/drought situation.
- Encourage coordination among major water suppliers, water managers, and users in the county (e.g., conservation districts, towns, MDU, and others) to share information and plans for drought.
- Provide education on water conservation measures.

Expand capabilities to prepare and respond to natural disasters.

Suggested projects:

- Ensure that critical facilities have operating weather radios.
- Expand use of weather radios by the general public
 - Provide education about how to use and where to purchase
 - Work with local suppliers to provide discounts for weather radios (e.g., sell at cost)
- Assess back-up power for communication facilities to ensure that warning systems and communications work during power outages.

- Provide public education on preparing for disasters:
 - Information on warning systems—what they mean, and what to do
 - How to get information during a disaster (e.g., weather radios, transistor radios, other)
 - Information on various types of disasters and how to prepare for them (e.g., what you need in your vehicle or home to respond to winter storm situations)
- Identify best mechanisms to reduce impacts to high-risk populations when they are stranded in their homes or when they are without power critical for health maintenance (e.g., oxygen, etc.)
- Ensure that there is adequate power and back-up in the town of Sidney. Encourage the planning board to address the potential for power supply shortages in Sidney.

Mitigate the potential loss of life, property, and infrastructure from flooding.

Suggested projects:

- Continue to investigate potential for flood controls (e.g., dam) on Lone Tree Creek.
- Continue to assess standards for rebuilding roads, bridges, etc. in areas that have experienced multiple flood events.
- Understand dam condition and help provide information to dam owners.
- Assist with identifying funding options for dam owners to make improvements as needed for downstream safety
- Examine options for flood-proofing the sewage lagoons in Sidney and Savage, which could be threatened by Yellowstone River flooding.

Reduce impacts of severe winter storms.

Suggested projects:

- Investigate options for reporting weather conditions aimed at travelers throughout the county (e.g., commuters between Richland County and Glendive).
- Identify and mark snow routes and schedules and publicize the information.

NEXT MEETING

The next meeting was scheduled for May 23 at 7:00 p.m.

RICHLAND COUNTY CWPP/PDM PLAN

Steering Committee/Public Meeting

May 23, 2005

Welcome

Anne Cossitt welcomed participants and explained that this was the third and final planning meeting for the CWPP/PDM plan for the County.

Quick Review

Contractor Cossitt reviewed the purpose of PDM and CWPP Plan and schedule for completion. She explained that the tasks for the meeting were to review the goals, objectives and projects, and prioritize the projects.

Goals and Objectives

A preliminary draft of the hazard mitigation chapter including the goals, objectives, and projects was handed out. The group read through the goals, objectives, and projects for the potential disasters. Projects were changed, added or deleted.

Project Prioritization

Meeting participants went through each project as a whole group and prioritized them into high, medium, or low based upon subjective judgment against the following criteria.

- Number of lives at risk
- Value of property at risk
- Infrastructure at risk
- Risk of business interruption/loss
- Cost/benefit of the project

The group decided that projects that were specific to Fairview or Sidney should be prioritized by those communities.

Wrap-up

Anne explained that a draft of the entire document would be available for a 30-day public review period once the maps and fire goals have been finalized. The review period will likely begin later in the summer. Once the review period has ended, the plan will be finalized and submitted for approval by the town, city, and county. Following that it will go through state and federal review. Participants were thanked for their involvement in the planning process.

Sign-in Sheets

Attendance Sheet						
Activity <u>Kick-off Meeting -</u>						
Location <u>Sadney</u>		Date(s) <u>1/5/05</u>				
Duration <u>1.0 hr.</u>						
Name & Title		Affiliation	E-Mail Address & Phone#	Agency Use Only		
				H	M	T
Name: <u>Barb Beck</u>		<u>Beck Consulting</u>				
Title:						
Name: <u>Norman R. Parrett</u>		<u>mtDes</u>				
Title: <u>D4-Representative</u>						
Name: <u>Penn Lewis</u>		<u>Richland County</u>				
Title: <u>Clerk & Recorder</u>						
Name: <u>Mike Risher</u>		<u>Rich. Co</u>				
Title: <u>Commissioner</u>						
Name: <u>Henry Johnson</u>		<u>" "</u>				
Title: <u>Commissioner</u>						
Name: <u>Don Steppeler</u>		<u>Richland County</u>	<u>dscammish@richland.org</u>			
Title: <u>Commissioner</u>						
Name: <u>Butch Rendaers</u>		<u>Richland Co</u>				
Title: <u>DES COORDINATOR</u>						
Name: <u>Anne Cossitt</u>		<u>Cossitt Consulting</u>				
Title: <u>Cossitt Consulting</u>						
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Attendance Sheet

Activity Richland County Steering Comm Hee - PDM-CWPP

Location Sidney Date(s) Feb 7, 2005

Duration 2 hours

Name & Title	Affiliation	E-Mail Address & Phone#	Agency Use Only		
			H	M	T
Name: <u>ERIC LEDISTO</u>	<u>BLM</u>	<u>ERIC_LEDISTO@MT.BLM.GOV</u>			
Title: <u>ASSISTANT FIRE MGMT OFFICER</u>		<u>406 233-2903</u>			
Name: <u>Randy Sanders</u>	<u>DNRC</u>	<u>rsanders@mt.gov</u>			
Title: <u>Fire Program Manager</u>		<u>406-233-2904</u>			
Name: <u>Chuck Quinnell</u>	<u>savage VFD</u>	<u>406-776-2331</u>			
Title: <u>Asst Chief Savage FD.</u>		<u>406-489-0331</u>			
Name: <u>Marshall Vojacek</u>	<u>Savage Fire</u>	<u>406-776-2257</u>			
Title: <u>Chief Savage</u>		<u>406-433-2012 work</u>			
Name: <u>DEL ZADOW</u>	<u>SIDNEY FIRE</u>	<u>406-433-1122</u>			
Title: <u>DEPUTY CHIEF</u>					
Name: <u>Steve Andrew</u>	<u>FAIRVIEW</u>	<u>406 742 5426</u>			
Title: <u>ASST CHIEF</u>		<u>cell 480-2225</u>			
Name: <u>Tim Denowh</u>	<u>Fairview Fire Dept</u>	<u>701-744-5886</u>			
Title: <u>Chief</u>					
Name: <u>Alan Osmath</u>	<u>Fairview Fire</u>	<u>406-742-8222</u>			
Title: <u>Sec Treas</u>					
Name: <u>BRYAN CUMMINS</u>	<u>FAIRVIEW MT</u>	<u>406-742-5227</u>			
Title: <u>MAYOR</u>		<u>406-480-1025</u>			
Name: <u>Craig Herbert</u>	<u>MDU</u>	<u>Craig.herbent@mdu.com</u>			
Title: <u>Station Mgr</u>		<u>(406) 433-1614 Ext 306</u>			
Name: <u>BRENDA FRERLING RN</u>	<u>SIDNEY HEALTH CENTER</u>	<u>bfrerling@sidneyhealth.org</u>			
Title: <u>INFECTION CONTROL/EMPLOYEE HEALTH COORD.</u>		<u>(406) 433-2100 EXT 2300</u>			
Name: <u>Gail Stansson</u>	<u>Sidney</u>	<u>schoolsupt@richland.org</u>			
Title: <u>Richland City Superintendent</u>		<u>433-1608</u>			
Name: <u>Julie Brodhead RPHN</u>	<u>Richland County Health Dept.</u>	<u>jbhealth@richland.org</u>			
Title: <u>RN - Emergency Preparedness</u>		<u>433-2207</u>			
Name: <u>Debra Ann Anderson</u>	<u>Richland County Health Dept - Sidney</u>	<u>debbie.a@mt.st.org</u>			
Title: <u>LEPC - CERT</u>		<u>433-6916</u>			
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Attendance Sheet

Activity Richland County Steering Committee - PDM - CWPP

Location Sidney Date(s) Feb 7, 2005

Duration 2 hours

Name & Title	Affiliation	E-Mail Address & Phone#	Agency Use Only		
			H	M	T
Name: <u>William H. Green</u> Title: <u>INS. AGENT</u>	<u>Handle County's</u> <u>Liab. + Prop. + Vehicle</u> <u>Insurance</u>	<u>Sidney@midrivers.com</u>			
Name: <u>MARVIN JOHNSON</u> Title: <u>RICHLAND CO. COZONER</u>		<u>bJohnson@midrivers.com</u> <u>433-2919</u>			
Name: <u>DEMETRIE DANIEL</u> Title: <u>undersheriff</u>	<u>Sheriff's Office</u>	<u>undersheriff@palmer@richland.org</u>			
Name: <u>HERBERT SCHMIERER</u> Title: <u>ROAD FOREMAN</u>	<u>RICHLAND COUNTY</u> <u>PUBLIC WORKS</u>	<u>HERB COWORKS@RICHLAND.ORG</u>			
Name: <u>Henry T. Johnson</u> Title: <u>County Commissioner</u>	<u>Richland County</u>	<u>506 6th ave NE</u> <u>Sidney mt. 59206</u>			
Name: <u>Darrell Finsaas</u> Title: <u>Fieldman</u>	<u>Williston</u> <u>Basin Interstate</u> <u>Pipeline Co</u>	<u>1612 35th St N.W.</u> <u>Fairview, MT 59221</u>			
Name: <u>Rob Gilbert</u> Title: <u>DEPUTY CHIEF / Dpty. DES</u>	<u>SIDNEY FIRE</u> <u>DEPT.</u>	<u>406-433-1122</u> <u>svfd@midrivers.com</u>			
Name: <u>David Jacobson</u> Title: <u>SG. Mgr.</u>	<u>Burch Agr. Res. Inc</u> <u>Sidney MT</u>	<u>406-433-3322</u>			
Name: <u>RAND HERZBERG</u> Title: <u>COSSITT CONSULTING TEAM</u>	<u>Member</u>	<u>galeherzberg@juno.com</u> <u>406 446-2121</u>			
Name: <u>Nancy Heins</u> Title: <u>CD</u>	<u>Team Source Agency</u> <u>Richland Co.</u>	<u>nancy.heins@mt.usda.gov</u>			
Name: <u>Kathy Helmuth</u> Title: <u>I work in public health, but I'm doing this on my own.</u>		<u>fnkhel@midrivers.com</u> <u>406-774-3798 or 433-2207</u>			
Name: <u>Butch Rends</u> Title: <u>DEC Coordinator</u>	<u>Richland</u> <u>Co</u>	<u>Butch-Rends@msulidc</u> <u>433-2220 montana.edu</u>			
Name: <u>Garry (Bink) Miller</u> Title: <u>Dice Res. Westmoreland coal</u>		<u>406-798-3657</u>			
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Rev. 4/23/03

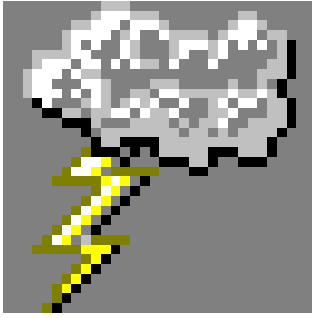
Attendance Sheet						
Activity <u>Richland Co PDM</u>						
Location <u>Sidney</u>		Date(s) <u>4-25-05</u>				
Duration <u>2 hours</u>						
Name & Title		Affiliation	E-Mail Address & Phone#	Agency Use Only		
				H	M	T
Name: <u>Geob. Green</u>			<u>geob@midrivers.com</u>			
Title: <u></u>			<u>406-488-3331</u>			
Name: <u>HERB SCHMIERER</u>						
Title: <u>ROAD FOREMAN</u>			<u>406-433-2106</u>			
Name: <u>MARVIN JOHNSON</u>			<u>mjohnson@midrivers.com</u>			
Title: <u>COUNTY CORONER</u>			<u>488-2919</u>			
Name: <u>Bill Green</u>			<u>greeim@excite.co</u>			
Title: <u>COUNTY INSURANCE AGENT</u>			<u>482-1606</u>			
Name: <u>Butch RENDERS</u>						
Title: <u>Richland Co DES</u>						
Name: <u>RUSS HUOTARI</u>			<u>coworks@richland.org</u>			
Title: <u>Co. PUB WKS DIR</u>			<u>406-433-2407</u>			
Name: <u>Kathy Holmuth</u>			<u>fnkhl@midrivers.com</u>			
Title: <u>Home resident -</u>			<u>406-774-3798</u>			
Name: <u>Ken Larson</u>			<u>blarson@montana.edu</u>			
Title: <u>MSU/Richland Co. Extension Agent</u>			<u>(406) 433-1206</u>			
Name: <u>Judy LaPan</u>			<u>jhealth@richland.org</u>			
Title: <u>Admin/Richland Co. Health Dept.</u>			<u>(406) 433-2207</u>			
Name: <u>Norman Parrent</u>	<u>Dona/DES</u>		<u>pnw@midrivers.com</u>			
Title: <u>Dist. Rep.</u>			<u>406-234-2809</u>			
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Attendance Sheet

Activity Richland Co - PDM/CWPP Meeting
 Location Sidney Date(s) May 23, 2005
 Duration 7:00 pm - 9:00 p.m. 2 hours

Name & Title	Affiliation	E-Mail Address & Phone#	Agency Use Only		
			H	M	T
Name: <u>Nonna R. Parrett</u>	<u>DMA</u>	<u>ndes@midrivers.com</u>			
Title: <u>District IV Rep</u>	<u>DES</u>	<u>406-234-2809</u>			
Name: <u>Butch Randani</u>	<u>Richland Co.</u>	<u>DES@richland.org</u>			
Title: <u>Rich. Co. DES COOR.</u>		<u>406-433-2220</u>			
Name: <u>William Green</u>	<u>Richland Co</u>	<u>sidain@midrivers.com</u>			
Title: <u>Ins. Agent</u>	<u>Insurance Agent</u>	<u>406/482-1606</u>			
Name: <u>MARVIN JOHNSON</u>	<u>RICHLAND</u>	<u>1102nd AVE. NW</u>			
Title: <u>CHIEF DEPUTY / Co. Coroner</u>	<u>COUNTY</u>	<u>bjohnson@midrivers.com</u>			
Name: <u>Kathy Helmut</u>	<u>Richland County</u>	<u>fhkhel@midrivers.com</u>			
Title:	<u>resident</u>	<u>406-774-3798</u>			
Name: <u>Amber Ellis</u>	<u>Richland County</u>	<u>433-6946</u>			
Title:	<u>Health network</u>				
Name: <u>HENRY T. Johnson</u>	<u>Richland Co</u>				
Title:	<u>Comm.</u>	<u>488-1451</u>			
Name: <u>Deanna Palmer</u>	<u>Richland County</u>	<u>undersheriff@palmerd</u>			
Title: <u>Under Sheriff</u>	<u>Sheriff's Office</u>	<u>richland.org</u>			
Name: <u>Daniel Funnas</u>	<u>WBI</u>	<u>701-744-5329</u>			
Title: <u>Fieldman</u>					
Name: <u>Julie Broadhead RN</u>	<u>RC Health</u>	<u>406-433-2207</u>			
Title: <u>RN</u>	<u>Dir</u>	<u>jbhealth@richland.org</u>			
Name: <u>George A. Johnson</u>	<u>UNIVERSITY</u>	<u>geoba@midrivers.com</u>			
Title: <u>Pres</u>		<u>406-488-3331</u>			
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Meeting Flyers, Notices and News Articles



RICHLAND COUNTY PRE-DISASTER PLANNING MEETING

Monday, April 25

7:00 p.m.

Basement of Library in Sidney

Open to the public.

Anyone with an interest is encouraged to attend and participate.

For more information, contact:

County Disaster Emergency Coordinator, Butch Renders, 433-2220

Contractor, Anne Cossitt, 633-2213



rwtech.com



rwtech.com

RICHLAND COUNTY

2nd meeting of the Pre-Disaster Steering Committee

Please plan to attend

Monday, April 25th

7:00pm

Sidney Library Basement

Open to the public

Anyone with an interest is encouraged to attend and participate!



124 S Central Ave
Sidney, MT 59270
Phone: (406)433-6946
Fax: (406)433-7866

RICHLAND COUNTY

Final meeting of the Pre-Disaster Steering Committee

Please plan to attend

Monday, May 23rd

7:00pm

Sidney Library Basement

Open to the public

Anyone with an interest is encouraged to attend and participate!



124 S Central Ave
Sidney, MT 59270
Phone: (406)433-6946
Fax: (406)433-7866

Disaster Mitigation Planning Underway in Richland County

On Halloween night, 1999, wind storms whipped up a wildfire that rushed across parts of Richland County and at one point extended nearly 60 miles in length. Along with the ice storms of November of 2000 we've had numerous creeks flooded four times in the past century, each time causing economic damage to Richland County, the most recent in

2001 when floods took out the 9th Avenue bridge among others. Floods, wild fires, winter storms, and droughts are the primary natural disasters Richland County has experienced through time.

Each natural disaster has the potential to take lives, destroy property, and interrupt transportation and commerce. And, natural disasters are costly. For all

these reasons, Richland County is joining other counties across the country to prepare a Community Wildfire Protection and Pre-Disaster Mitigation Plan. Preparing the plan is a requirement for eligibility for emergency relief funds from the Federal Emergency Management Agency should the county experience a natural disaster. The project is made possible by funding from the Bureau of Land Management.

Cossitt Consulting out of Park City, Montana, will be preparing the fire/disaster plan under the guidance of an expanded Local Emergency Planning Committee (LEPC) with representation from elected officials, law enforcement, emergency medical services, fire protection, disaster emergency services, county public health, public works, the chamber, the insurance industry, transportation, utilities, and the public school system. At the project kick-off meeting held with the contractors on

January 5th, Commissioner Don Stepler stated, "We're living between disasters all the time," and Commissioner Mark Rehbein added, "It's a matter of learning from them."

The first meeting of the LEPC/Steering Committee is scheduled for 7 p.m. on Monday, February 7. The meeting will take place in the basement of the library in Sidney. A total of three meetings to develop the plan will be scheduled in Richland County over the next six months and anyone interested in participating is encouraged to do so.

As a part of developing the plan, past disasters need to be documented and analyzed. "I'm really interested in hearing from long-time residents who have memories—even if they are just vague memories—of floods, wild fires, winter storms, or other natural disasters" stated Anne Cossitt. Anyone with information to share or questions about the project is encouraged to contact Cossitt at 633-2213.

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For all these reasons, Richland County is joining other counties across the country to prepare a Community Wildfire Protection and Pre-Disaster Mitigation Plan. Preparing the plan is a requirement for eligibility for emergency relief funds from the Federal Emergency Management Agency should the county experience a natural disaster. The project is made possible by funding from the Bureau of Land Management.

Cossitt Consulting, Park City, will be preparing the fire/disaster plan under the guidance of an expanded Local Emergency Planning Committee with representation



SUBMITTED

Officials, from left, Barb Beck, Cossitt Consulting Team, Anne Cossitt, Cossitt Consulting, Butch Renders, County Disaster and Emergency Service coordinator, and Don Steppler, county commissioner discuss the Community Wildfire Protection and Pre-Disaster Mitigation Plan. A public meeting is scheduled for 7 p.m. Feb. 7 in the Sidney Public Library basement.

from elected officials, law enforcement, emergency medical services, fire protection, disaster emergency services, county public health, public works, the chamber, the insurance industry, transportation, utilities, and the public school system.

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the basement of the library in Sidney. A total of three meetings to develop the plan will be scheduled in Richland County over the next six months, and anyone interested in participating is encouraged to do so.

As a part of developing the plan, past disasters need to be documented and analyzed. "I'm really interested in hearing from longtime residents who have memories – even if they are just vague memories – of floods, wild fires, winter storms, or other natural disasters," said Anne Cossitt.

Anyone with information to share or questions about the project is encouraged to contact Cossitt at 406-633-2213.

Ideas Sought on Avoiding Natural Disaster Impacts

The final meeting of the process to develop a community wildfire and pre-disaster mitigation plan will be held in the basement of the library

in Sidney on May 23. The meeting will begin at 7 p.m. and the public is invited to attend.

The county is preparing the plan to protect people, property, and infrastructure from the inevitable natural disasters that can occur here including drought, winter storms, flooding, wildfire, and wind events.

The meeting will focus on identifying and prioritizing projects that can be done to achieve the following goals.

- Goal One: Minimize the economic impacts of drought.

- Goal Two: Extend capabilities to prepare and respond to natural disasters.

- Goal Three: Mitigate the potential loss of life, property, and infrastructure from flooding.

- Goal Four: Reduce impacts of severe winter storms.

In addition, the group will work on goals and projects related to reducing the effects of wildfire.

A number of project ideas were raised at the last planning meeting, held on April 25 in Sidney. Some of these suggestions included: Developing baseline information on water supply and water use in Richland County, expanding the use of weather radios and ensuring that critical facilities have operating weather radios, assessing and ensuring adequate back-up power for communications during power outages, examining options to flood-proof the sewage lagoons in Sidney and Savage, and identifying and marking snow routes and schedules.

Following the meeting, the contractor will take the ideas for projects and pre-

pare a draft of the plan. "We're hoping for a good turnout at the meeting. After this meeting, we will be finalizing the draft of the plan," so if there's something you want in the plan, now's the time to bring it up," said contractor, Anne Cossitt. She added that projects in the final plan will be eligible to compete for funding from the Federal Emergency Management Agency (FEMA) and other sources.

In the next several months, the draft plan will be made available for public review at various locations throughout the county. An announcement will be made in local papers when the draft plan is available. For additional information on the plan or to provide comments, you can contact Anne Cossitt at 633-2213, or Butch Renders at 433-2220.

ROUNDUP, WEDNESDAY, SEPTEMBER 21, 2005

County Fire & Disaster Mitigation Plan Ready For Review

The Richland County Pre-Disaster Mitigation and Community Wildfire Protection Plan is now ready for review. The plan, intended to identify what can be done in advance to lessen the impacts of disasters, covers a variety of events including winter storms, wildfire, power outages, and hazardous materials. It also identifies a number of specific projects that will help make Richland County more disaster-resistant.

The plan will be available after Sept. 13. Richland County Disaster and Emergency Services Coordinator Butch Renders commented, "Preparing the plan will keep Richland County eligible for various kinds of funding. We've applied for and received mitigation funding on other disaster projects in the past—including bridge and road repair after flooding and the Lone Tree Creek project. This plan will help us to get that kind of support in the future."

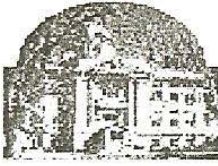
The county started working on the plan in January. A citizen steering committee, established to guide the plan development, included the local emergency services committee, members of the fire departments, local businesses, town and county government, schools, law enforcement, and others. "We sure want to thank everyone who helped put this together, including everyone who attended any of the meetings we had between January and June," added Renders.

Copies of the draft plan will be available at Sidney Public Library, Richland Co. Extension office, Fairview and Sidney City Halls or by contacting Richland Co. DES.

The county will accept comments until Oct. 13. You can submit comments in any form by submitting them to Butch Renders at 433-2220 or Richland Co. DES 121 3rd Ave NW, Sidney, MT 59270 or des@richland.org.

Once comments have been reviewed and incorporated, the plans will go to the county commissioners and town council for adoption.

Correspondence



Recd 1-20-05

COUNTY OF

OFFICE OF THE COUNTY CLERK
201 WEST MAIN STREET
SIDNEY, MONTANA 59720-4035

CLERK OF DISTRICT COURT
201 WEST MAIN STREET
SIDNEY, MONTANA 59720-4035

OFFICE OF THE COUNTY CLERK
201 WEST MAIN STREET
SIDNEY, MONTANA 59720-4035

201 West Main Street Sidney, Montana 59720-4035
406-433-1706 FAX 406-433-3731 rccomm@midrivers.com

January 20, 2005

Dear Community Representative,

You are invited to serve on the Steering Committee to guide the preparation of Richland County's Community Wildfire Protection and Pre-Disaster Mitigation (CWPP/PDM) Plan.

So, what is this plan and what purpose does it serve? The primary purpose of the CWPP/PDM Plan is to increase the county's resistance to natural disasters. Among other things, the PDM will look at historic disasters, identify those types of disasters the county is at most risk from, and propose projects to address those hazards. The portions of the plan that address wildfire will describe the current situation and values at risk, and also propose goals and projects to address the areas of concern.

And, there are important benefits for the county in preparing the plan. Once the plan is done, we will be eligible to compete for federal grant funds to complete projects, and the county will be eligible for assistance from the Federal Emergency Management Agency (FEMA) in the event we do experience a disaster such as a devastating flood, wildfire, or winter storm, for example.

The commitment we are asking of you is simple. Between now and the end of June, we'd like to have you attend one or more of the three two-hour evening Steering Committee/Public meetings.

At these meetings, the Steering Committee and interested participants will provide guidance to the contractor we've hired to write the plan. The first of these meetings is scheduled for February 7, 2005, at 7:00 p.m. in the basement of the library in Sidney. We hope to see you at as many of the three meetings as you can make, preferably all three.

Your participation will ensure that we end up with the highest quality plan possible. If you have any questions about the plan or your role as a Steering Committee member, please call our County Disaster Emergency Coordinator, Butch Renders, at 433-2220.

Sincerely,
Richland County Commissioners
Don Steppler, Mark Rehbein, Henry T. Johnson

January 24, 2005

Bryan Cummins
Mayor, Town of Fairview
5 East 6th St.
Fairview, MT 59221

RE: Community Disaster Planning

Dear Mayor Cummins:

I'm writing to let you know about a planning effort being initiated by the county. This effort will help the county and the two incorporated communities become more disaster resistant, make the county and the communities eligible for project funds, and ensure the county is eligible for disaster relief funds if a natural disaster does occur.

When completed, the plan must be approved by the state and the Federal Emergency Management Agency (FEMA.) The plan will need to be adopted by the county commissioners, and the communities of Fairview and Sidney.

I have been contracted to prepare the plan for the county and wanted to let you know about the effort right from the start. I've enclosed a business card in case you have any questions about the project.

You will be receiving an invitation in the mail from the commissioners soon inviting you to participate as a Steering Committee member for the project. We plan to hold three Steering Committee/public meetings. The first meeting is scheduled for Monday, February 7, 7:00 p.m. in the basement of the library in Sidney. I hope you or someone from the Fairview town council is able to attend. I'll look forward to meeting you at some point in the process, Bryan. Please feel free to call if you have any questions at all.

Sincerely,

Anne T. Cossitt

cc: Butch Renders, County DES Coordinator

January 24, 2005

Bret Smelser
Mayor, Town of Sidney
608 2nd St. SE
Sidney, MT 59270

RE: Community Disaster Planning

Dear Mayor Smelser:

I'm writing to let you know about a planning effort being initiated by the county. This effort will help the county and the two incorporated communities become more disaster resistant, make the county and the communities eligible for project funds, and ensure the county is eligible for disaster relief funds if a natural disaster does occur.

When completed, the plan must be approved by the state and the Federal Emergency Management Agency (FEMA.) The plan will need to be adopted by the county commissioners, and the communities of Fairview and Sidney.

I have been contracted to prepare the plan for the county and wanted to let you know about the effort right from the start. I've enclosed a business card in case you have any questions about the project.

You will be receiving an invitation in the mail from the commissioners soon inviting you to participate as a Steering Committee member for the project. We plan to hold three Steering Committee/public meetings. The first meeting is scheduled for Monday, February 7, 7:00 p.m. in the basement of the library in Sidney. I hope you or someone from the Sidney town council is able to attend. I'll look forward to meeting you at some point in the process, Bret. Please feel free to call if you have any questions at all.

Sincerely,

Anne T. Cossitt

cc: Butch Renders, County DES Coordinator

CHAPTER 3: HAZARD EVALUATION AND RISK ASSESSMENT

This chapter identifies:

- Hazards to which Richland County is susceptible
- What effects the hazards can have on the County's physical, social, and economic assets
- Which areas are most vulnerable to damage from these hazards
- Estimated costs of damage

Chapter 3 includes a short description of **methodology**; followed by a list of the **identified hazards** discussed in this chapter and rationale for why each hazard was included; detailed profiles of each hazard type including **historic occurrences** and **vulnerability and potential loss estimates**; and **assets** and **vulnerable populations** that could be affected by various hazards.

Methodology

Hazards were evaluated for the county as a whole and for the incorporated jurisdictions of Fairview and Sidney as follows:

1. Identify hazards that may occur. Hazards that may occur were identified through:
 - a. Meetings and discussions with community leaders (county commissioners, mayors, and county DES Coordinator).
 - b. The Steering Committee meetings (steering committee and members of the public identified past disasters and potential future disasters).
 - c. Review of hazard lists in the FEMA "How-to Guide: Understanding your Risks" and initial research on websites recommended in the Guide.
 - d. Review of the State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment.
 - e. Researching other plans and reports, and newspapers. Other plans and reports that were used in developing this report include local, state and federal plans, such as the Richland County Soil Survey and the Montana Drought Plan. Source information is cited in the plan and referenced at the end of chapters 1, 3, and 5.
 - f. Discussion with technical experts (included in the Sources section at the end of the chapter) and a visit to the NOAA National Weather Service Glasgow to review weather-related natural hazards and obtain storm information.

2. Prioritize the hazards and focus on the most prevalent. Hazards were prioritized at the 1st Steering Committee meeting. (See also discussion below on “Identified Hazards” for more detail on methodology for identifying and prioritizing hazards.)
3. Profile hazard events. Using a variety of information sources (listed at the end of this chapter), this step basically answers the question, “How bad can it get?” This included:
 - a. Identifying maps of the geographic extent of hazards that can occur in predictable areas (note that that hazards with “predictable occurrence areas were limited primarily to flood hazards identified in Federal Insurance Rate maps).
 - b. Obtaining data on historical occurrences—frequency, severity, and related damage.

Vulnerability and potential loss estimates were assessed for the county and towns of Fairview and Sidney as follows:

1. Identify the future potential for the hazard to result in damages. This was done primarily by looking at past occurrences and by considering factors that could potentially increase risk (such as new development in hazard areas).
2. Inventory assets and identify what might be affected by the different hazard events. This includes structures, operations important to the county’s economy as well as vulnerable populations that could be particularly hard-hit by a disaster. Critical facilities and vulnerable populations were identified at the 1st steering committee meeting, when participants were asked to identify important features of their community that could potentially be affected by a disaster. In addition, the contractor consulted with the DES Coordinator and others to identify any other important assets. Inventories of critical facilities included location and replacement value, identified using tax assessments, and via conversations and information provided by representatives of the various facilities. Because most of the hazards in Richland County can essentially occur anywhere, the inventory of assets is included as a separate section in this chapter. For the flood hazard, for which specific maps are available, more detailed asset information is included in the Flood section of this chapter. The County DES Coordinator and County Public Works Director assisted in identifying the proportion of assets located in the mapped flood areas.
3. Estimate losses. Generally, losses for each hazard were estimated using information from past events, since most hazards in Richland County can vary in location and extent. In cases where there is little or no damage

information in terms of dollar cost for the county, information may include costs from other locations.

For the mapped flood hazards, the cost estimate is more detailed (because the data can be limited to a specific area), and includes dollar costs based on various scenarios (% of loss).

Identified Hazards

Table 3.1 includes potential hazards for Richland County, how and why they were identified, how they were ranked at the public meeting, and where they are discussed in this chapter. The incorporated municipalities were assessed for all risks, and where the risk is unique or different from that of the county in general, it is identified in the detailed descriptions of each hazard that are included in this chapter.

Table 3.1 Richland County Hazards

Type	How Identified	Why Identified	Location in Chapter 3	Rank at Public Meeting
Dam Failure	Commissioners Steering Committee/Public Meeting Town officials Newspaper accounts National Inventory of Dams The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment	Historical failure of the Vaux Dams upstream of Sidney (1951) Of 80 dams in Richland County, 1 is categorized as a high hazard, 10 are categorized as significant hazard	Flooding	None
Drought	Commissioners Steering Committee/Public Meeting Newspaper accounts The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment Disaster Declarations, National Weather Service	Drought affects agriculture, one of the basic economic drivers of the county	Drought	1
Earthquake	USGS geohazards map	Northwest corner of Richland County falls within an area with 3% g peak acceleration	Earthquake	None

Type	How Identified	Why Identified	Location in Chapter 3	Rank at Public Meeting
Flood	Commissioners Steering Committee/Public Meeting Town officials Newspaper accounts The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment Disaster Declarations National Weather Service	Serious damage has occurred in the past from floods in the county; Lone Tree Creek was identified as a particular problem for Sidney	Flooding	3
Hailstorm	Steering Committee/Public Meeting National Weather Service	Crop and property damage have occurred in the past	Severe Thunderstorms	None
Hazardous Materials	Steering Committee/Public Meeting Town officials The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment	History of past occurrences. Consequences could be severe.	Hazardous Materials	None
Severe Winter Storm	Commissioners Steering Committee/Public Meeting The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment Disaster Declarations National Weather Service	Historic occurrences, some severe and costly. Can affect emergency services note that past events have caused county roads to close for as many as 3 days.	Winter Storms	2
Tornado	Steering Committee/Public Meeting The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment National Weather Service	History of tornadoes and corresponding losses, including injuries	Severe Thunderstorms	None
Wildfire	Commissioners Steering Committee/Public Meeting The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment Disaster Declarations	Drought, fine fuels, high winds, and historic fires	In Chapter 5	1

Type	How Identified	Why Identified	Location in Chapter 3	Rank at Public Meeting
Windstorm	FEMA Wind Zone Map National Weather Service	Area lies in Zone 2, a high wind area	Severe Thunderstorms	None
Power Outages	Steering Committee/Public Meeting Meeting with Sidney mayor and public works director	Strong storms have caused power outages in the past. In addition, Sidney is fueled by one electric line and power to run the water and sewer system is nearing capacity.	Assets at Risk	None
Volcanic Events	The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment	Richland County could have some effects from volcanic events to the west (Pacific Northwest and Yellowstone Park area)	Volcanic Eruptions	None
Landslides	The State of Montana Multi-Hazard Mitigation Plan and Statewide Hazard Assessment, County DES Coordinator	County shown on USGS maps to have areas of high susceptibility to landslides, some landslides known to have damaged some county roads	Landslides	None

FEMA identifies seven major hazards (floods, earthquakes, tsunamis, tornadoes, coastal storms, landslides, and wildfires) to be considered in the development of a Pre-Disaster Mitigation Plan. Of these seven major hazards, five were identified as potential hazards in Richland County--floods, earthquakes, tornadoes, wildfires, and landslides. With the exception of wildfire each of the above identified hazards is reviewed in depth in this chapter. The wildfire hazard and mitigation are addressed in Chapter 5 of this document.

Farming-related accidents were identified as a hazard at the public/steering committee meeting but are not included in this assessment because they do not fit the framework of primary focus on natural hazards. Farming accidents can be serious, but like traffic accident hazards not related to other disaster types (such as winter storms) they are not covered in this plan.

Drought

“Drought is an extended period of below normal precipitation which causes damage to crops and other ground cover; diminishes natural stream flow; depletes soil and subsoil moisture; and because of these effects causes social, environmental, and economic impacts to Montana.” (Montana Drought Response Plan, 1995)

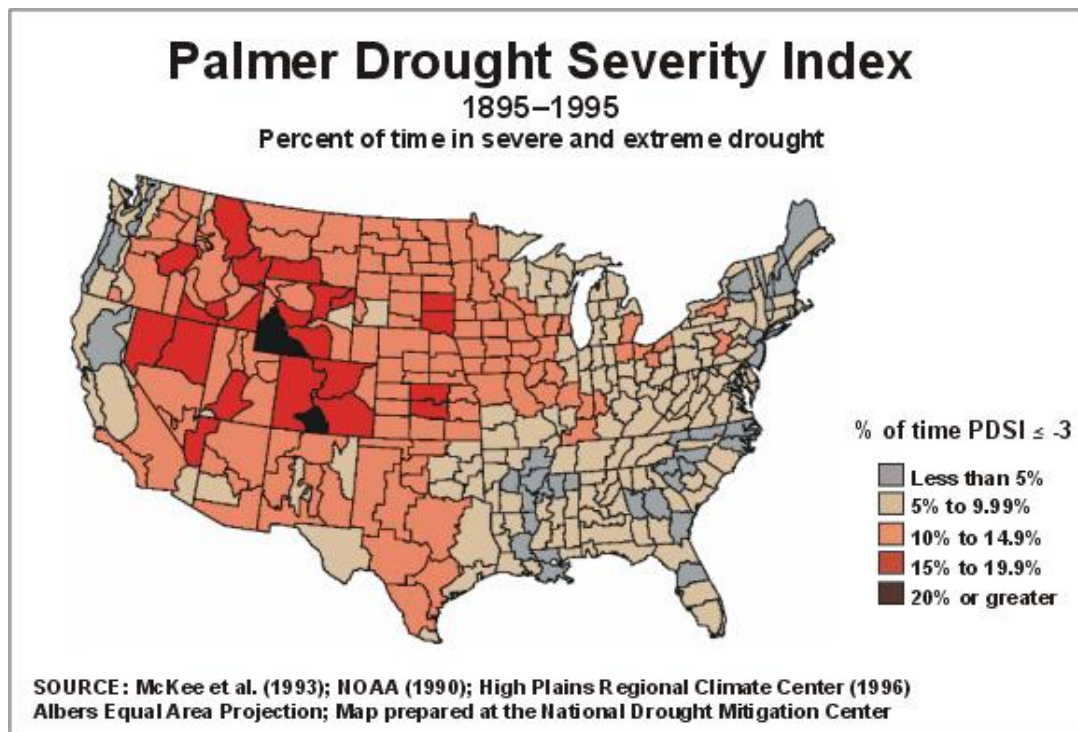
Drought can occur throughout the county.

Historic Occurrences

Legendary drought occurred in eastern Montana in the 1930s. Impacts were severe across not just Montana, but the entire Great Plains and led to changes in farm practices that have lessened the impacts of subsequent droughts, such as the one in the 1950s.

As shown in Figure 3.1, the area that includes Richland County has been in severe or extreme drought 10 to 15% of the time between the years 1895 and 1995. Figure 3.1 is based on the Palmer Drought Severity Index (PDSI), which quantifies drought in terms of moisture demand and moisture supply.

Figure 3.1 Palmer Drought Severity Index



Annual average precipitation in Richland County is between 13-14 inches. At the weather monitoring station in Sidney, annual precipitation was less than 13 inches in 10 years between 1980 and 2004. Between 1950 and 2004, the lowest annual average was 7.72 inches in 1983. Since 2000, average annual precipitation fell below 13 inches in two out of five years.

(<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?mtsidn>)

Drought also brings other related hazards—grasshoppers, plant disease, wind erosion, and wildfires. Table 3.2 lists declarations related to drought (excluding wildfires, which are covered in Chapter 5 of this report).

Table 3.2 Drought-related Disaster Declarations

Type	Period	Number	Notes
Presidential Declarations		0	Drought is excluded from presidential declarations*
USDA Secretarial Declarations	1998- 2004	10	Richland was listed as a “contiguous” county or as part of other disaster listings In 2003, Small businesses, dependent on income from farmers and ranchers, in Richland and 4 other counties were eligible to apply for low interest loans from the Small Business Administration.
FEMA Declarations	1974-2003	0	
State Declarations	1975-2004	1	For a Grasshopper infestation in 1986-\$138,075 in state and local disaster fund expenditures in Richland County

Source: USDA, FEMA

* Abers, Jesse, Montana Drought Advisory Committee.

Vulnerability and Potential Loss Estimates

Based on past history, there is continued probability that drought will occur in the future in Richland County. Participants in the Steering Committee process ranked drought as having a high probability of occurrence. Richland County is vulnerable to losses from drought because:

- 1) Drought affects commercial viability of agricultural production, which is one of the primary drivers of the county’s economy
- 2) Drought in areas outside of the county can affect the supply of irrigation water (e.g., along the Yellowstone and Missouri Rivers)
- 3) Long-term drought could potentially affect the groundwater which supplies drinking water for the major communities and most rural residences in the county

Drought produces a complex web of impacts that spans many sectors of the economy. Direct effects of drought include reduced crop, livestock, and rangeland productivity, increased fire hazard, reduced water levels, and damage to wildlife and fish habitat. Reduced income for farmers and ranchers results in indirect economic effects, such as reduced business and income for local retailers, increased credit risk for financial institutions, capital shortfalls, loss of tax revenues and reduction in government services, unemployment, and out-migration.

The Montana Governor's Drought Report of May, 2004 referenced the economic and societal effects of drought:

The state's biggest drought story remains the deepening socio-economic drought. The drought threatens to change the very fabric of Montana's rural communities and landscape. It is the final straw that can bankrupt 4th- and 5th-generation farmers and ranchers, placing the birthright of descendants of pioneer families on the auction block. And like the changing vistas, many of the well-established county agri-businesses are disappearing forever, along with other main street institutions.

There is no standardized method for tracking economic losses related to drought in Montana. Historical data for direct economic effects of drought include the following:

- In 1980, after more than a year of record low precipitation, 600 of the 800 farmers in Richland county applied for federal payments for drought. Total estimated cost of damages in eastern Montana was \$380 million. (Montana Multi-Hazard Mitigation Plan)
- Continued lack of moisture in 1985 resulted in a state-wide wheat crop that was the smallest in 45 years. For a typical 2500 acre farm/ranch, the operation lost more than \$100,000 in equity over the course of that year. (www.state.mt.us/dma/DES/Drought.htm)
- Disaster Fund expenditures of \$138,075 for a grasshopper infestation in Richland County in 1986. (State Declarations 1975-2004)
- In 2001, the Montana Department of Livestock estimated a decrease in Montana cattle herds of approximately 450,000 head of cattle, or 18%, due to drought. The loss estimate consisted primarily of cattle moved out of state for change of pasture (and includes those that were sold). (Drought Relief Activities of the Montana Department of Livestock and Montana Agricultural Statistics Service)

Drought does not directly affect structures and infrastructure in the same dramatic and immediately costly ways that other hazards, such as flooding, can and to which there are existing disaster aid responses, such as through FEMA. The primary effect of drought is on the land and the following analyses of potential effects on crops and livestock production is intended to provide an estimate of some initial costs associated with drought. Indirect cost effects, such as reduced business with local merchants, etc.), would be in addition to direct losses to agricultural producers. The combined direct and indirect costs of drought are estimated to be double that of the direct costs alone (Aber, personal communication).

Table 3.3 presents estimates for key crops in Richland County comparing typical yields with drought year yields. The table also provides an economic loss estimate for these crops, which are only a part of the overall loss because the table does not include all crops in Richland County.

Table 3.3 Drought Loss Estimation for Key Crops

Crop	Normal Precip Year Yield Per Acre	Drought Year Yield (per acre)	Average Price Per Unit	2003 Acres Planted	Economic Loss \$
Durum Wheat (bushels)	26.7	14.2	4.13	23,900	1,233,838
Oats (bushels)	50.0	36.0	1.81	12,000	304,080
Barley (bushels)	39.0	26.0	2.88	26000	973,440
Dryland Hay (tons)	1.7	1.3	77.5	46500	1,441,500
Sugar Beets (tons)	21.6	19.1	40.9	16780	1,715,755
Total estimated \$ loss for these crops					\$5,668,613

Notes/Methodology:

Normal Precip Years: 1996-1998, 1996: 15 inches, 1997: 14 inches, 1998: 17 inches as measured in Sidney, and yields for each of those years (averaged)

Drought Years: 1983: 7.7 inches, 1984: 10.2 inches, 1985: 11.4 inches as measured in Sidney and yields for each of those years (averaged)

Average Price: Average price per unit over the past 3 years for which data are available

2003 Acres Planted: From Montana Agricultural Statistics 2004

Economic Loss: (Normal Year Yield minus Drought Year Yield) multiplied by Average Price Per Unit and by number of Acres Planted

Sources:

USDA websites: <http://www.nass.usda.gov/mt/> and

http://www.nass.usda.gov:81/ipedbcnty/c_MTCrops.htm

Western Regional Climate Center website: <http://www.wrcc.dri.edu/index.html>

Montana Agricultural Statistics 2004

Identifying the direct economic loss from drought for livestock producers involves many factors, most of which are difficult to track with existing systems. Richland County ranks 14th in cattle inventory in Montana. Over the past 10 years (1995-

2004), cattle numbers ranged from 56,000 to 66,000. In 2004, the inventory was 59,000. (www.nass.usda.gov and Montana Agricultural Statistics 2004)

Livestock numbers, however, are not necessarily a good indicator of economic impacts. For example, cattle numbers can remain relatively stable over a period, but ranchers can be experiencing any number of economic impacts that include:

- Reduced productivity of rangeland
- Forced reduction of foundation stock
- Closure/limitation of public lands for grazing
- Cost of supplemental feed and/or cost of moving to other locations with pasture
- High cost/unavailability of water for livestock
- Cost of new or supplemental water resource development (wells, etc.)
- Increased feed transportation costs
- Disruption of reproduction cycles (delayed breeding, more miscarriages, etc.)
- Decreased stock rates
- Range fires

In summary, drought has the potential to cost Richland County residents millions of dollars annually. The estimates above indicate annual losses of \$6 million or more for some crop types alone. Considering losses to other crops and livestock, the direct costs could be many more millions of dollars annually.

Flooding

“A flood is a natural event for rivers and streams. Excess water from snowmelt, rainfall, or storm surge accumulates and overflows onto the banks and adjacent floodplains.” (FEMA, *Understanding Your Risks*).

Flooding can occur throughout the county. The Yellowstone River flows from the southwest to the northwest across the eastern portion of Richland County. The Missouri River forms the northern boundary of the county. Numerous other creeks and drainages cross the county.

The geographic extent of the 100-year flood (a flood magnitude with a probability of occurring every 100 years) has been mapped for the Missouri and Yellowstone Rivers in Richland County, for the town of Fairview, and for the portion of Lone Tree Creek that flows through Sidney.

Historic Occurrences

Flooding in Richland County has occurred from storm events, snow melt, ice jams, dam failure, and flash floods. As noted in Table 3.4, floods occur often along the Yellowstone River and creeks and rivers flowing into the Yellowstone. (Lower Yellowstone Ice Jam Study) Late winter flooding due to high flow and ice occurs on a regular basis in the Sidney area. Flash flooding can occur throughout the county. Table 3.5 summarizes disaster declarations for flood events in Richland County.

Table 3.4 Selected Flood Events in Richland County

Date	Location	Nature of Flood	Estimated Property Damage	Estimated Crop Damage	Loss/Damage and Notes
1882-1960	Near Sidney				33 recorded major floods during this time period; 19 of which were ice jam related
April 1943	Fairview-Charboneau Creek				One flood-related death—man drowned trying to save livestock
March 1951	Lone Tree Creek	Dam failure			A combination of high flows and ice caused the collapse of a bridge across the spillway, resulting in a reduction in spillway capacity and overtopping of the dams.
March 1969	Yellowstone River	Ice jam			\$230K in damage—unspecified as to type Flood level of 20.27 feet 14,000 acres covered in water
March 1972	Lone Tree Creek	High runoff and debris			2 lift stations put out of service, Ralph Koppel farm under 7 feet of water. Sidney High School and homes in Kingbey Addition were flooded. Feedlot flooded at downstream end. Debris carried by high runoff clogged the culvert under County Route
June 7, 1994	Sidney	Flooding	500K	50K	Yellowstone River crested at 24.03 feet, more than 5 feet above the flood stage of 19.00 feet
March 20, 1997	Lone Tree Creek	Snow melt and ice	280K		Damage to bridges Feed lot flooded Several cattle drowned Creek rose 4 feet in 3 hours

Date	Location	Nature of Flood	Estimated Property Damage	Estimated Crop Damage	Loss/Damage and Notes
March 22, 1997	Richland and Dawson Counties	Ice jams	\$280 K		Damage to bridges Followed a winter with record-setting cold and snow, rapid snow melt Small streams draining into Yellowstone River also out of their banks
June 16, 1997	Yellowstone River	Flood			Beet field damage Caused by snow melt
June 22, 1997	Hay Creek	Flash Flood	10K	250K	Total loss of wheat Took out a bridge on County Road 350 Caused telephone pole to topple Other property damage More than 6 inches of rain fell in less than 2 hours
Date	Location	Nature of Flood	Estimated Property Damage	Estimated Crop Damage	Loss/Damage and Notes
June 22, 1997	Northeast of Lambert	Flash Flood	5K		Bridge damage
July 1-2 1997	Sidney and Richland County	Flash Flood			Damage to 5 bridges Numerous county roads closed due to washouts and flood water Strain on Vaux Dam and some concern it would fail 6 inches of rain in 4 hours caused flash flooding throughout much of Richland County
July 17, 2001	North Richland County	Flash Flood	10K		Culvert and Road washout 3-4 inches of rain in 2 hours
March 16-18, 2003	Richland, Dawson, and Prairie Counties	Ice Jam	75K		Most damage in Richland County: Flooded several fields Gravel road wash-out
May 28, 2005	5 miles north of Savage	Flash Flood			A foot of water over Montana Highway 16 for 100 yards
July 11, 2004	5 miles north of Savage	Flash Flood			Water on Highway 16

Sources:

"Storm Data and Unusual Weather Phenomena" June 1996-March 2005, NOAA
 Lower Yellowstone Ice Jam Study, Andrew Tuthill October 1997
 FEMA Flood Insurance Study of Richland County Unincorporated Areas, 1985
 Newspaper accounts
 NOAA data—River Gage Station near Sidney

Table 3.5 Disaster Declarations for Flooding

Type	Period	Number	Notes
Presidential Declarations	1998- 2004	0	
USDA Secretarial Declarations	1998- 2004	6	Richland was listed as a “contiguous” county or as part of other disaster listings
FEMA Declarations	1974-2003	1	1997 Declaration for Richland and 20 other counties and one Indian Reservation \$7.7 million in Disaster Aid
State Declarations	1975-2004	1	Same as for the 1997 FEMA Declaration

Sources: Various agencies

Lone Tree Creek

Lone Tree Creek, which flows through Sidney, has had several flood events. The first major event occurred in March, 1951 when the Vaux dams failed. The dams are no longer classified as high hazard because they are reduced in size and contain less than 50 acre feet of water. (Siroky)

Floods along Lone Tree Creek occurred even after the dam break and included events in 1972 and 1997 that caused considerable flooding and related damage.

Ice Jams

More ice jams have been reported for Montana than for any other state in the nation. Sidney has the fourth-highest number (30) of recorded ice jams in Montana. (*Montana Multi-Hazard Mitigation Plan*)

Between 1882 and 1960, there were 33 major floods at Sidney, 19 of which involved ice jams. (Lower Yellowstone Ice Jam Study) Ice jams are accumulations of ice that restrict water flow and cause backwater to build and flood low-lying areas upstream of the jam. Downstream areas can also be flooded if the jam releases suddenly, sending a flash flood downstream.

Along the Yellowstone River, a 2 to 3-mile long jam typically forms at Sidney in the bend adjacent to the city sewer lagoons. Cooling water released from the coal-fired power plant on the left bank melts a lead into the upstream end of the jam. (Lower Yellowstone Ice Jam Study)

Damage to Irrigation Facility from March 2003 ice jam on Yellowstone River



Photo courtesy of NOAA weather station in Glasgow, MT)

The ice jams can inundate considerable areas. An estimated 14,000 acres was covered in the 1969 flood along the Yellowstone. Damage has affected a few residences, but primarily affects agriculture. Newspaper accounts of the 1969 flood described some of the damage. "About one third of the deer living on the islands in the river were killed..." For the Delmar Willian home east of Savage, hardest hit with water level in the home 42 inches above the flood, major post-flood problems included "tremendous amounts of ice and trash covering fields, and the contamination caused by murky waters."

Flash Floods

Flash floods are events "occurring with little or no warning where water levels rise at an extremely fast rate." (FEMA, *Understanding Your Risks*) Flash floods have occurred throughout Richland County.

Vulnerability and Potential Loss Estimates

Based on past history, there is continued probability that flooding will occur in the future in Richland County. Steering committee participants indicated a moderate probability for future flood events. Efforts in the past, including reduction of brush/debris on Lone Tree Creek, installation of larger size road drainage facilities throughout the county, have reduced the risk of damage, but fundamentally there are still flood risks throughout the county.

In addition, Richland County and the incorporated communities of Fairview and Sidney participate in the national flood insurance program, and as such these

jurisdictions have floodplain management programs. Also as part of the program, FEMA has prepared flood insurance studies and prepared Flood Insurance Rate Maps (FIRMs) showing special flood hazard areas (See Figure 3.2)

Maps prepared by FEMA indicate the area of the 100-year flood designation. The 100-year flood designation applies to the area that has a 1% chance on average of flooding in any given year. The 100-year flood is also referred to as the base flood, a national standard that has been adopted for the National Flood Insurance Program (NFIP). (FEMA, *Understanding Your Risks*) There is actually a range of floods that could occur, other than just the 100-year flood. For example, an “annual flood” occurs much more frequently and produces less damage than a 100-year flood. The 100-year flood would produce much greater damage but occur less frequently.

The following examines the vulnerability and loss estimates for the following specific flood hazards:

- Town of Fairview
- City of Sidney
- Dams and Dam Failure
- Flooding/Flash Flooding in Rest of Richland County

Fairview

The National Climate Data Center (NCDC) did not have any reported flood events for Fairview in its database for the period from 1950-2004.

Water draining from the hills west of Fairview has some flood potential within town limits. As shown in Figure 3.3, the area in the 100-year flood floodplain (Zone A) is shown as a band, approximately the width of one city block, that extends from the USRS Main Canal at Dale Avenue and extending along Highway 200. The rest of the area shown on the map is in Zone C, defined on the FIRM as an area of minimal flooding. Zone C areas may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain.

Zone A includes residential areas, commercial areas (primarily along Highway 200), and railroad track and industrial property. No critical facilities identified in steering committee meetings or meetings with Fairview town officials are located in Zone A, but the area does include the Fairview School Shop building, WL Neu Construction, Korner Motel and the Power Key Pizza House. (Sharbono)

Fairview has one flood insurance policy in force with a value of \$140,000. (Heddin)

Figure 3.2 Richland County Flood Reach Boundaries

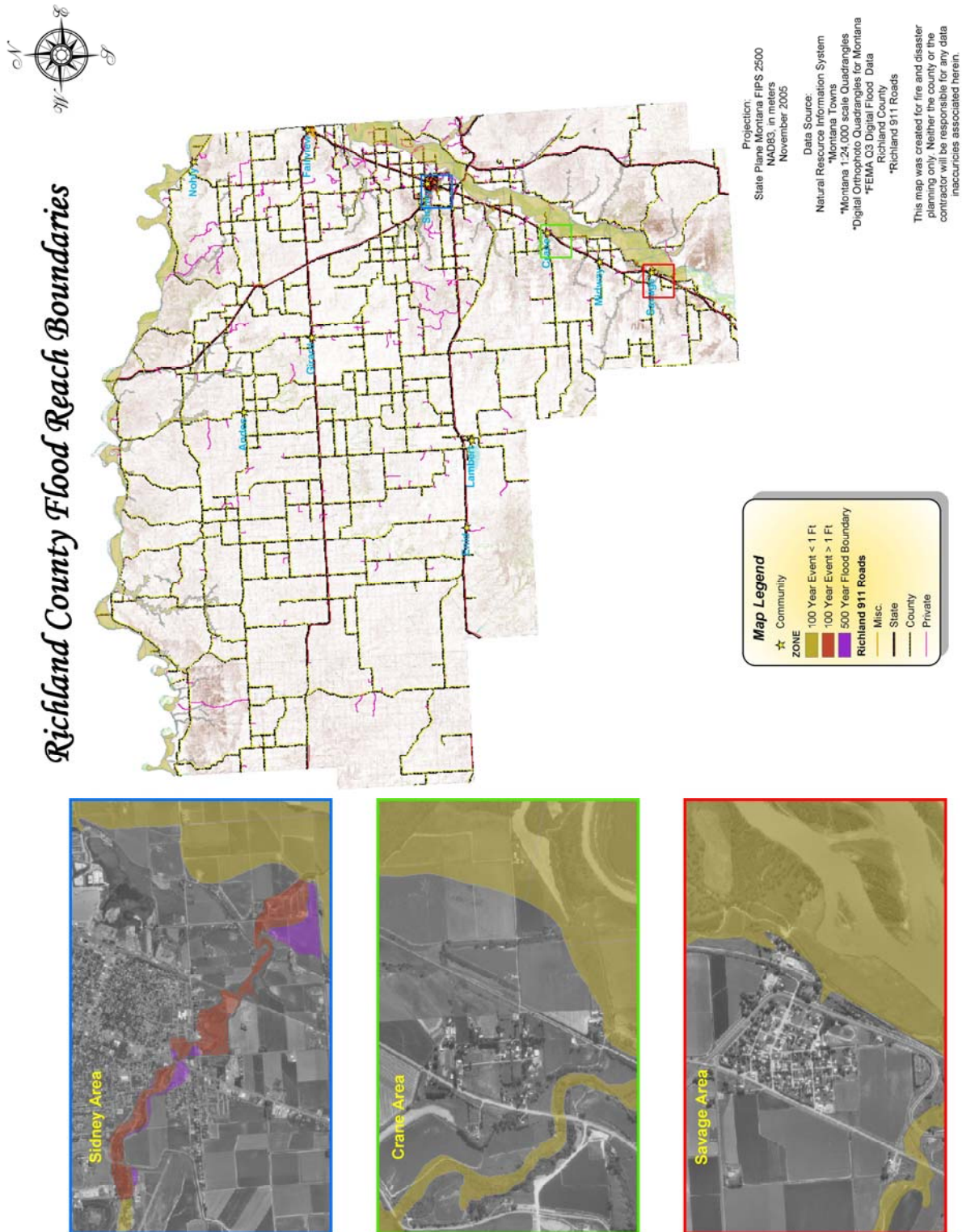
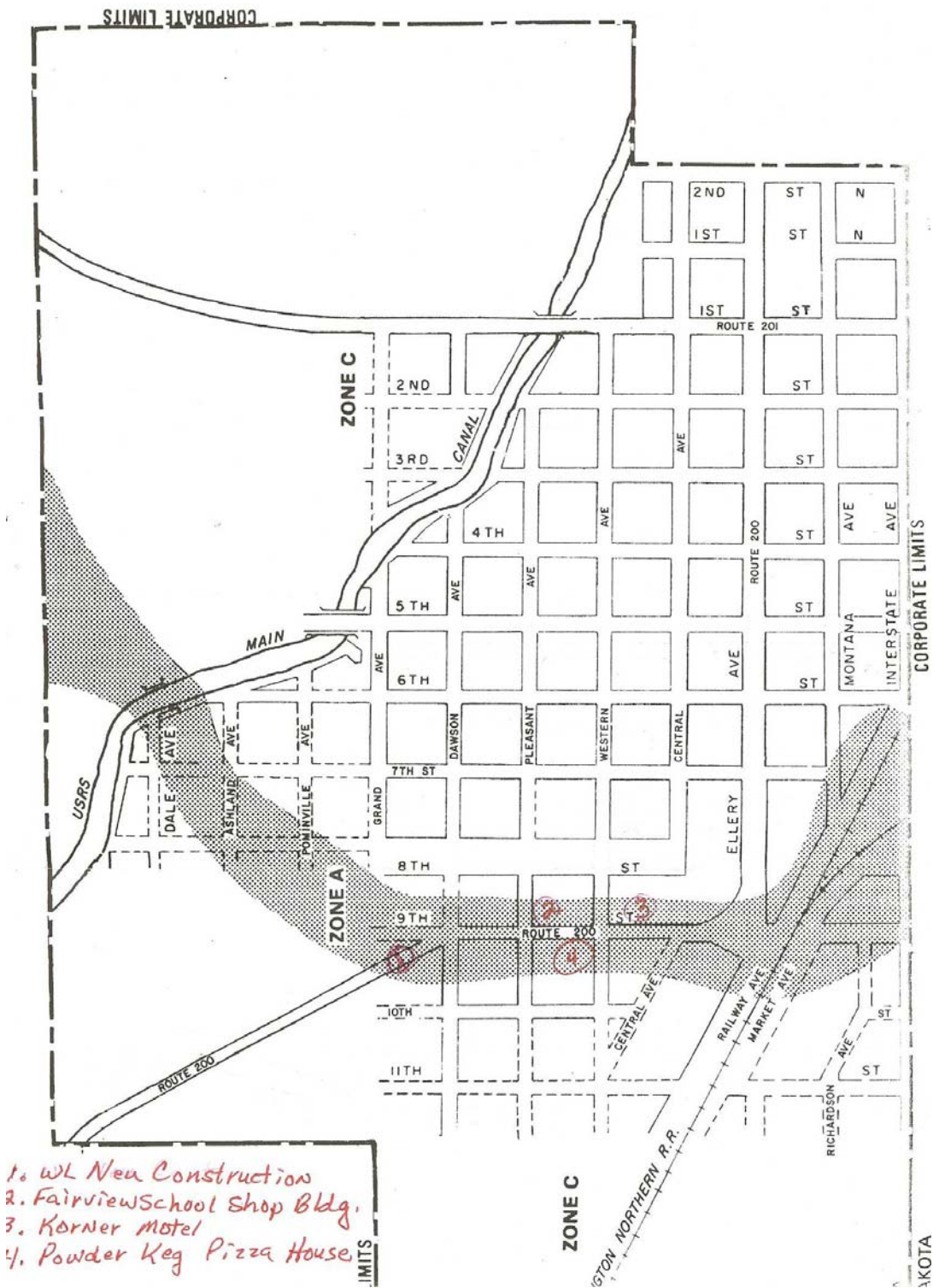


Figure 3.3 Fairview Floodplain Map



Source: FEMA

Table 3.6 provides estimates of flood losses, based on existing development. The flood plain area is in an established portion of town with some limited potential for in-fill development in the future. (Past trends indicate newer development on the fringes of the town, rather than in the town center.) In addition to the costs shown in the table, there could also be losses from business interruption, and repair costs for sewage distribution, water supply, and storm drain facilities if any repairs are necessitated.

Table 3.6 Estimation of Potential Flood Loss in 100-year Floodplain in Fairview

Description	Market Value	Estimated % located in floodplain	Total vulnerable to Risk	50% loss	10% loss
Residential	6,166,174	5%	308,309	154,154	30,831
Commercial	2,079,668	35%	727,884	363,942	72,788
Railroad property	257,853	25%	64,463	32,232	6,446
Telecommunication and Electric Property	674,797	10%	67,480	33,740	6,748
Equipment and Business Personal Property	865,083	20%	173,017	86,508	17,302
Town Roads	\$25,000/mi	Estimate .5 mile of town roads	12,500	6,250	1,250
State Highway 200	\$500,000/mi	Estimate of .5 highway mile	250,000	125,000	25,000
Total			1,603,653	801,826	160,365

Sources:

Montana Department of Revenue for tax year 2004 for property values

Road and highway values based on information for county and highway roads in Custer County Pre-Disaster Mitigation Plan, 2004

Butch Renders, County DES Coordinator

Sidney

There have been several flood events in Sidney—1951, 1972, 1994, and 1997. Costs associated with the 1994 flood included an estimated \$500,000 in property damages, and \$50,000 in crop damage and costs of the 1997 floods included over \$270,000 in property damage. (NCDC, query at www.ncdc.noaa.gov)

Sidney has eight flood insurance policies with a value of \$1.2 million. (Heddin)

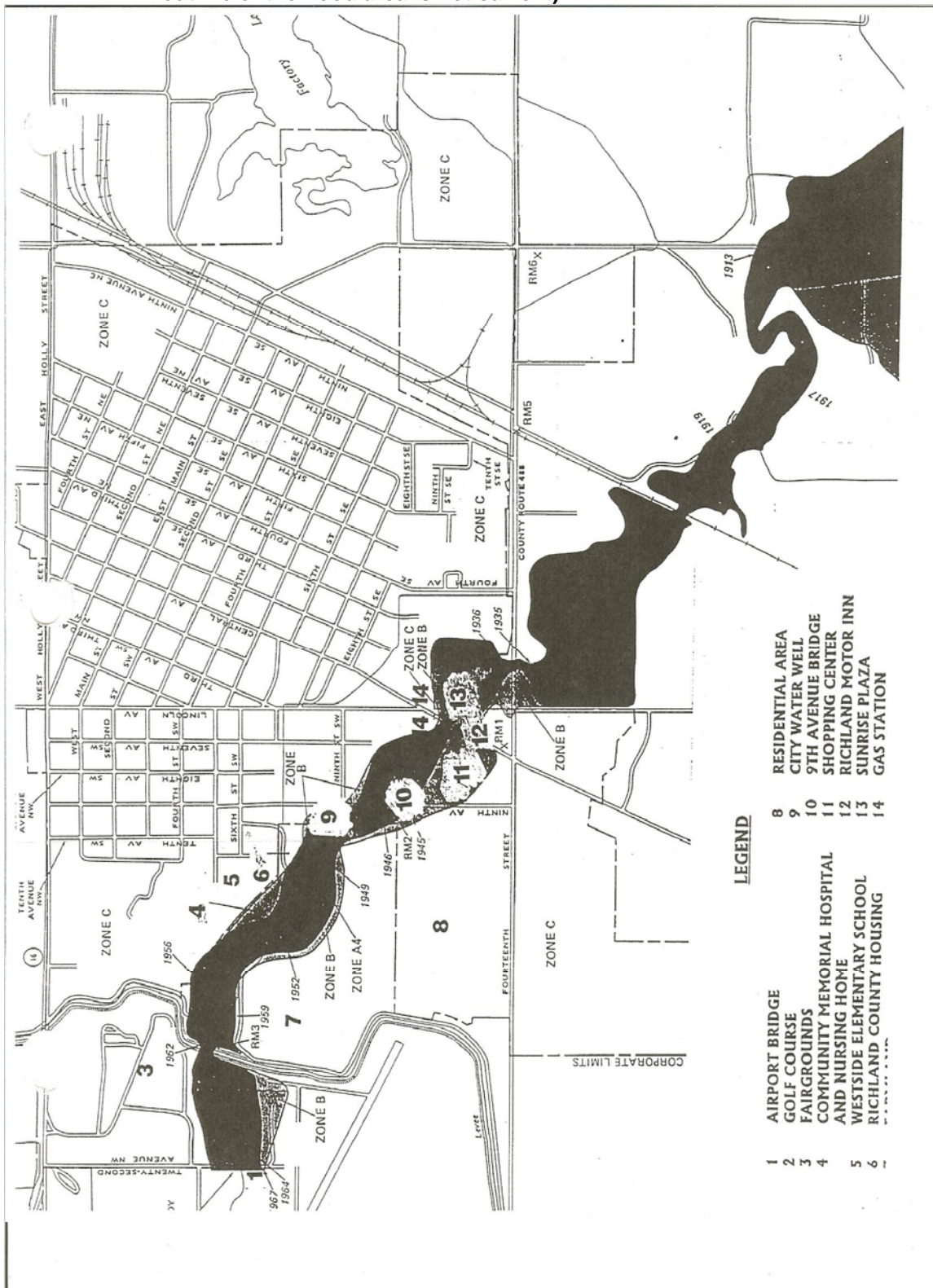
FEMA has mapped the 100-year flood for Lone Tree Creek, the primary flooding cause in Sidney. Based on information for a new map being developed for the floodplain, development in the floodplain includes residences, commercial, and government facilities, including the following:

- Lower Yellowstone Main Canal*
- Lodge at Lone Creek*
- Strip Mall (most is out of the floodplain)
- Fast-Food Restaurant
- Motel
- Railroad

* Identified as a “critical facility.” Replacement values for critical facilities are included at the end of the chapter.

Table 3.7 provides estimates of flood losses. The flood plain area is in an established portion of town with some potential for in-fill development in the future. (Most newer development has taken place in the northwest area of town, outside of the Lone Tree Creek floodplain). In addition to the costs shown in the table, there could also be losses from business interruption, and repair costs for sewage distribution, water supply, and storm drain facilities if any repairs are necessitated.

Figure 3.4 Floodplain Map of Lone Tree Creek (This map is currently being updated, the outline of the flood area is not current)



Source: FEMA

3.7 Estimation of Potential Flood Loss in Lone Tree Creek 100-year Floodplain in Sidney

Description	Market Value	Estimated % located in floodplain	Total vulnerable to Risk	50% loss	10% loss
Residential	\$63,708,541	5%	\$3,185,427	\$1,592,714	\$ 159,271
Commercial	29,564,820	10%	2,956,482	1,478,241	147,824
Railroad property	696,967	5%	34,848	17,424	1,742
Telecommunication and Electric Property	4,019,924	10%	401,992	200,996	20,100
Equipment and Business Personal Property	5,032,947	10%	503,295	251,647	25,165
Town Roads	\$306,000/mi	Estimate 2 mile of town roads*	612,000	306,000	61,200
County Roads	\$90,000/mi	Estimate 1/3 mile of county road	30,000	15,000	3,000
State Highway 200	\$500,000/mi	Estimate of .5 highway mile	250,000	125,000	12,500
Bridges	3,000,000	Estimate 3 bridges at \$600,000	1,800,000	900,000	90,000
Total			9,182,045	4,591,022	459,102

*not including costs of curb and gutter

Sources:

Montana Department of Revenue for tax year 2004 for property values

Road and highway values based on information for county and highway roads in Custer County

Pre-Disaster Mitigation Plan, 2004

Butch Renders, County DES Coordinator

Russ Huotari, County Public Works Director

Meldahl, Terry, City of Sidney Public Works Director

Dams and Dam Failure

There are 80 dams in Richland County included in the National Inventory of Dams. One is classified as a high hazard, 10 are classified as significant, and 69 are classified as low hazard (including the Vaux dams upstream of Sidney). (National Inventory of Dams)

Table 3.8 Hazard Categories for Dams in Richland County

Hazard Category	Number of Dams in Richland County
High	1
Significant	10
Low	69
Undetermined	0
Total	80

Source: National Inventory of Dams

Definitions:

High: Where failure or misoperation will probably cause loss of human life.

Significant: where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

Low: Where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

Gartside Dam is the only identified high hazard dam in Richland County. Located on Crane Creek, it is owned by the state of Montana, and as a high hazard dam is required to be inspected at least once every five years. It is also required to have an Emergency Operations Plan, which is currently in place. There is no indication that this dam is likely to fail, but is listed as a high hazard dam because if it failed, there could be fatalities. (Siroky) The dam was not identified as an issue of concern by anyone in the county at the steering committee meeting or any other meeting held in the county for the pre-disaster planning purposes.

The 10 dams listed as significant hazards are all privately owned. More costly damages associated with significant hazards can include roads and bridges. (Siroky) Although there has not been a significant dam failure in Richland County (other than the Vaux dams described above), cost of damage from dam failures in Valley and Beaverhead Counties (Frenchman Creek in 1952 and Browns Lake in 1984) were estimated between \$100,000 to \$150,000 (not adjusted for inflation). (*Montana Multi-Hazard Mitigation Plan*).

In addition to the dams in the county, there are dams upstream of Richland County in the Yellowstone and Missouri River watersheds that could result in major floods if the dams were to break. Of primary concern are the Fort Peck Dam on the Missouri River and Yellowtail Dam on the Big Horn River. There is no floodplain map for Richland County for a breach of the Yellowtail Dam, but estimates from the downstream county show that the flood waters would take approximately two days to reach the county. (Renders and Fransen) If the Fort Peck Dam were to breach, portions of Richland County would be inundated. These high hazard dams are inspected regularly and are not considered high probability for failure.

Flooding/Flash Flooding in Rest of Richland County

Flooding along the Yellowstone River has occurred numerous times. Areas within the 100 year floodplain primarily consist of agricultural land and agricultural facilities (such as irrigation ditches), roads, railroad, rural residences. Sewage lagoons for Fairview, Sidney, and Savage are also vulnerable to impacts from flooding along the Yellowstone.

Future development in Richland County is likely to be similar to existing. There is some potential for the number of residences along the rivers to increase based on trends across Montana for year-round and seasonal residences close to recreational amenities such as water and hunting opportunities.

Agricultural losses can include complete destruction of crops, reduced crop production and impacts to irrigation facilities. In the 1969 Yellowstone ice jam flood, 14,000 acres were inundated. In 1997, the flood affected nine places along the Lower Yellowstone Irrigation project, which cost \$89,900 to repair. (Nypen). It took about 10 days to get the main canal patched, during which time no irrigation water was available, causing crop stress.

Table 3.9 Summary of potential loss impacts from flooding in Richland County (other than within the 100-year floodplains in Sidney and Fairview)

Type	Description	Historical Damage Amounts/Other Information
Agricultural	Total loss, reduced production	Total of \$1.5 million reported in crop loss (1971 to 1997); \$384,615 from 1986 floods alone
	Damage to irrigation facilities	\$89,900 in 1997 alone
Residential	Potential loss or damage to homes	\$61,000 (median value of Richland County housing unit in 2000)
Railroad	Potential for interrupted service or track damage	Newspaper accounts indicate interrupted service
Sewage treatment facilities	Potential for inundation, eroding of distance from river bank	Replacement values included at end of chapter
Roads, culverts and bridges	Washouts	\$442,000 to repair/replace roads, bridges, and culverts at 41 different locations in Richland county in 1991 Costs of replacing county roads in flooded areas would be \$90,000 per mile plus the additional cost of culverts and drainage facilities

Sources:
SHELDUS data
Nypen, Jerry. Personal communication.
Newspaper accounts

Flash floods have been reported at various locations throughout the county and have resulted in damages ranging from \$5,000 to more than \$250,000. Flash floods can be deadly because they develop so rapidly and the water moves at great velocity. Flash floods can also cause expensive damage, washing away segments of road, culverts, and bridges. In 1991 a severe summer storm caused flash flooding and caused damage at 41 different sites throughout the county, costing approximately \$442,000 in repairs to roads, culverts, and bridges throughout the county.

Summary of Potential Cost of Future Events

Damage from floods in Richland County could result in millions of dollars worth of damage. Although total loss estimates for damages in the designated flood plain along Lone Tree Creek are close to \$10 million, it is unlikely that a flood would result in complete destruction.

SHELDUS data base information indicates total flood-related losses of \$897,757 in property damages and \$1.5 million in crop damage from 10 events between 1960 and 2000. The flood event with the highest reported damage was in 1986 with \$384,615 in property damage and \$384,615 in crop damage.

The SHELDUS Data Base only includes events that had damages in excess of \$50,000. SHELDUS calculates dollar losses on reported amounts and primarily relies on government assistance payment amounts and amounts that may be reported through other means (e.g., newspaper accounts). Consequently the cost estimates do not include costs that may be paid by private individuals or private insurance companies unless those were publicly reported.

Information from the NOAA weather station in Glasgow indicated losses of \$500,000 to property alone from the 1994 flood event along the Yellowstone.

Winter Storms

Extreme winter weather events occur throughout Richland County and include blizzards, extreme cold temperatures, heavy snow, ice storms, freezes, and dangerous foggy conditions. Winter weather events have occurred in Richland County from October through May.

A blizzard is defined as a storm with winds over 35 mph with snow and blowing snow reducing visibility to near zero.

Average annual snowfall is 33 inches (as measured in Sidney). The largest amount of snow received in one year was 69 inches in Sidney in 1975. Average minimum temperatures range from 0 to 7 degrees in December through February.

Historic Occurrences

The earliest documented winter storm in eastern Montana was wide-spread and legendary. This storm cost the lives of large numbers of open range cattle. During the winter and spring of 1887 there were 40 days of blinding blizzard and snowstorm.

There have been three disaster declarations for Richland County for winter storms between 1974 and 2004, as shown in Table 3.10.

Table 3.10 Disaster Declarations for Winter Storms

Type	Period	Disaster Date	Public Assistance	Notes
Federal Declarations	1974-2004	2000	\$2,732,994	November storm. Richland, Daniels, Dawson, Roosevelt, and Sheridan Counties included in the declaration.
State Declarations	1978-2004	2004	\$67,456	Richland County

Source: Montana Multi-Hazard Mitigation Plan

Data from the NOAA offices in Glasgow indicate 31 separate winter weather events that affected Richland County between June 1996 and mid-March 2005. The following provides a narrative account of some of these events.

January 1997

Very strong winds and wind chill to 80 below zero at times. Hit McCone-Richland, Dawson, Prairie and Wibaux counties. One man died after he decided to walk for help after his vehicle was stuck in a snow drift. He was found 500 feet from his car.

February 1998

Throughout McCone, Richland, Dawson, Prairie, and Wibaux Counties—up to 1.5 ft of snow in combination with sustained winds of 30-40 mph and visibility to zero. Snow drifts ranged between 5-12 feet. All roads leading into North Dakota were closed. Sections of roads were closed for 4 days. One man died when he left safe shelter and attempted walk 26 miles to his home.

November 2000

Major winter storm hit eastern Montana leaving over 1500 residents without power as nearly 2000 power poles snapped in half. Storm started as rain and produced several hours of sleet before changing to snow, strong winds and blizzard conditions.

December 2000

A blizzard on the 15th and 16th, and then an ice storm on the 27th that closed nearly all paved roads

January 2004

Throughout eastern Montana, extreme cold/wind chill on Jan 4-5—windchill record in Richland County at 48 below 0. Then eastern Montana was hit by two winter storms later in the month and both resulted in roads closed for emergency travel only. At least a dozen people were stranded and had to be rescued by state and county road crews, who had to travel in near zero visibility

Vulnerability and Potential Loss Estimate

Given the location of Richland County in eastern Montana and weather patterns for the northcentral United States, winter storms, ice storms, and related colder weather events will continue to be a potential hazard for Richland County. Winter storms were rated as having a moderate probability of occurrence by steering committee participants.

Winter storm events in Richland County can have a number of potential effects and related costs:

- Loss of human life and other human risks—hypothermia, stranded motorists
- Damage to electric transmission facilities and power outages
- Livestock loss and stress
- Crop losses and stress
- Road closures
- Snow removal and sanding
- Business interruption expenses
- Overtime loads on emergency and law enforcement personnel
- Vehicle accidents
- Other property damage (e.g., structural to buildings, water, sewer lines)

In addition, the county faces challenges of winter storm related safety factors for isolated rural residents. The county has had periods where roads are closed for days, basically stranding individuals wherever they might be. Providing emergency services to persons located far from emergency operations bases can be hazardous for emergency personnel as well.

Although there was an overall population decline between 1990 and 2000, there is indication that the population of the county is on the rise. Most new development occurs close to existing communities, although there is some new development in more rural areas (predominately along the Yellowstone River). Overall, however, there is nothing to indicate that new development would cause any significant hazard response issues that differ from current conditions.

Based on past events, the single most costly effect of winter storms for structures in Richland County is for damage to power facilities. The November 2000 ice storm that took out thousands of pole lines across northeastern Montana affected about 20 miles in Richland County and cost approximately \$600,000 to repair. (Note that with some mitigation funding from FEMA, repair also included adding in air dampeners to reduce the “galloping effect” that causes lines and poles to break during ice/wind storms.)

Based on information from the SHELDUS Data Base, 10 winter weather events between 1960 and 2000 resulted in a total of \$981,100 in property damage and \$258,290 in crop damage (amounts not adjusted for inflation). The single event with the highest property damage was in November of 2000, when the power poles went down. The most costly single event for crops was in February of 1978, when \$238,095 was reported in damages.

Severe Thunderstorms (including Hail, Wind, and Tornadoes)

Richland County is subject to severe thunderstorms, lightning, hail, wind, and tornadoes throughout the county.

A severe thunderstorm is a thunderstorm that produces tornadoes, hail 0.75 inches or more in diameter, or winds of 50 knots (58 mph) or more. (Montana Multi-Hazard Mitigation Plan)

A tornado is a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. Tornadoes are categorized by the Fujita scale. The Fujita scale ranges from F0 (with estimated speeds less than 73 mph) to F5 (with estimated wind speeds greater than 261 mph). (Montana Multi-Hazard Mitigation Plan) The wind speeds are an estimate only. The Fujita scale is a damage scale. The worse the damage, the higher the F scale rating. In eastern Montana, with plenty of wide open spaces, if a really wide, fast spinning tornado hits an area with no buildings, it still has a rating of F0. (Fransen)

High wind events (exceeding 50 knots) can and do occur at any time of the year. When combined with snow, they create blizzard conditions and are discussed in the section above on “Winter Storms.” Straight line winds are more likely to occur in eastern Montana than tornadoes, and the resulting damage can be worse than a tornado. (Fransen)

Historic Occurrences

The National Climate Data Center indicates a total of 70 thunderstorm-wind events, 74 hail events, and 15 high wind events in Richland County between 1951 and 2004.

Richland County has been included in several disaster declarations related to severe thunderstorm, hail, and wind events, including 10 declarations from the USDA Secretary between 1998 and 2004.

Records from the NOAA weather office in Glasgow indicate that Richland County had 17 hail events with golf-ball sized hail (larger than 1.75 inches). The NOAA hail event database goes back to 1950, but the majority of the information is since the mid 90's when the NWS got the new radars and added a lot more staffing to many of its offices. (Fransen)

Table 3.11 Disaster Declarations including Severe Thunderstorms, Hail, Wind, and Tornadoes

Type	Period	Number	Notes
Presidential Declarations	1998- 2004	1	Nov 2000 for severe winter storms and tornadoes (North Dakota designation—Richland listed as contiguous)
USDA Secretarial Declarations	1998- 2004	10	Richland was listed as a “contiguous” county or as part of other disaster listings High winds cited in 9 declarations Hail cited in 3 declarations Tornadoes cited in 2 declarations
FEMA Declarations	1974-2003	1	1997 Declaration for Richland and 20 other counties and one Indian Reservation \$7.7 million in Disaster Aid
State Declarations	1975-2004	0	None that included Richland County

Source: Various Agencies

The Tornado Project data base lists 12 tornadoes in Richland County between 1880 and 2000. Three of these were Fujita Scale F2 tornadoes (1935, 1972, and 1975); three were F1 tornadoes (1946, and 2 in 1962), and the others were all F0 scale tornadoes. Injuries were caused by two tornadoes. Two persons were injured in the F2 tornado in 1935, and eight persons were injured in the F1 tornado in September 1946 that destroyed a home near Sidney. (Tornado Project and Montana Multi-Hazard Mitigation Plan)

Data from the NOAA offices provides narrative accounts of some of these events between 1996 and 2005, as follows:

July 1996

Severe thunderstorm winds in combination with $\frac{3}{4}$ to one inch hail produced damage outside Fairview. A trailer house was overturned and tossed into the side of a building, rolling over a Chevy blazer in the process. Power lines and trees were knocked down.

October 31 1999

High winds sustained at 50 to 60 mph and gusts to nearly 80 miles mph caused damage and were responsible for rapid spread of several wild fires.

Trees stripped bare by hail in Richland County on June 17, 2001



Photo courtesy of NOAA weather station in Glasgow, MT

June 17, 2001

Several large grain bins had their tops blown off, and a large pine tree was snapped in half. Rows of trees had all their leaves stripped off. Several hundred acres of crops were also 50-100 percent hailed out. One rancher had a cow killed by a lightning strike. \$50,000 in property damage; \$50,000 in crop damage.

July 11, 2004

Two buildings were damaged in Savage from thunderstorm winds. A portion of a roof was blown off of one building and the entrance door to a second building was damaged. \$50,000 in property damage.

Vulnerability and Potential Loss Estimate

Thunderstorms, windstorms and related weather events will continue to be a hazard for the county for existing and future development wherever it may be located in the county. Participants in the steering committee indicated a low to moderate probability of future tornado events and a moderate to high probability for windstorms and hail.

Severe thunderstorms, high winds, tornadoes, and hail have the potential for:

- loss of life and injury
- property damage (complete destruction possible in the case of tornadoes and extreme winds, other damage to roofs, siding, windows, vehicles, equipment, from strong winds, tornadoes, and hail)
- power outages and related effects
- crop damage (particularly from hail)
- livestock fatalities and injuries
- damage to utility infrastructure (power lines, etc.)

SHELDUS data indicates property and crop damage from severe thunderstorms, hail, lightning and wind events for the period 1960 through 2000 as follows:

Table 3.12 Damage Summary of Thunderstorm/Wind Events from SHELDUS data

Type	# of Events	Property Damage	Crop Damage
Severe Thunderstorm (includes events with hail and wind)	10	\$895,267	\$2,686,691
Strong Winds	4	870,135	298,095
Lightning	1		23,809
Total		\$1,765,402	\$2,984,786

Source: SHELDUS data base

The most property damage from a single event was \$500,000 (hail, wind, thunderstorm event in 1963) and the most costly in terms of crop damage was \$1 million from a severe thunderstorm in 1975. (SHELDUS)

Tornadoes and damaging straight line winds have the potential to destroy or significantly damage a building. Tornadoes have occurred along the Yellowstone River Valley and have the potential to take out any of the structures listed as critical facilities at the end of this chapter.

Because of the potential to completely destroy major facilities, tornadoes have some of the highest potential cost implications to the economy of any single hazard event. Losses could be in dollar amounts of hundreds of millions. (Refer to the description of potential impacts under “Business Related Loss Potential” in the section below entitled “Assets and Vulnerable Populations That Could Be Affected.”)

Hazardous Materials

Hazardous materials are chemical substances, which if released or misused, can pose a threat to the environment or health. Hazardous materials come in the form of explosives, flammable and combustible substances, poison, and radioactive materials. These substances can be released because of transportation accidents, pipeline releases or accidents, mechanical or human

error at various facilities. (Montana Multi-Hazard Mitigation Plan) A hazardous material incident could occur anywhere in Richland County.

As many as 500,000 products pose physical or health hazards and can be defined as “hazardous chemicals.” Nationwide, most discharges are from fixed facilities (52%) and discharges from mobile facilities (railroads, trucking, etc.) are about 18%. (Montana Multi-Hazard Mitigation Plan)

Based on information received at the planning meetings, issues of concern for Richland County include hazardous spills of all types, transportation-related spills, and pipeline leaks and ruptures. Specific substances of concern included chlorine, hydrogen sulfide, and effects of meth labs.

Transportation

Transportation facilities in Richland County include roads and highways, railroad, and pipelines.

State highways across Richland County include Highway 200 from the North Dakota border to south of Sidney and then west to Richey (Dawson County) and across the state, and Highway 16 from Culbertson (Roosevelt County) to Sidney and southwest to Glendive and Interstate 94. The highest annual average daily traffic (AADT) counts, as collected by the Montana Department of Transportation, are along Central Avenue in Sidney, where counts ranged from 8,250 to 11,500 in the four years between 1999 and 2003. (Cook)

The Burlington Northern Santa Fe (BNSF) Railroad runs parallel to the Yellowstone River and Highway 16 through Richland County. The BNSF carries coal, grain, sugar, and merchandise across the county. There is a side track in Sidney where cars may remain for periods of 24 hours or more. (Renders) There is one train daily in each direction, six days a week through the county. (Duryea)

There are two major pipelines that cross the county and a number of other pipelines related to the oil and gas development in the county.

Meth Labs

Methamphetamine, sometimes called “crank” or “speed,” is a highly addictive stimulant that can be produced from small labs in apartments, hotel rooms, cars--just about anywhere. The number of meth labs in Montana has seen a substantial increase over the past few years. In 2002, tax dollars were used to assist in hazardous waste removal from 122 lab sites across the state. For every pound of meth produced, the process generates 5-8 pounds of highly toxic waste. (Montana Department of Justice)

Once discovered by law enforcement, the bulk of the wastes are removed. Small but potentially harmful amounts may remain on surfaces and in absorbent materials (carpets, furniture), sinks, drains and ventilation systems. (KCI-the anti-meth site)

Fixed Sources

Fixed sources include non-mobile machinery, refineries, manufacturing plants, and numerous other fixed facilities. Richland County has several major facilities including the power plant, sugar beet processing facility, Anheuser Busch facility, and coal mine, as well as many other smaller fixed facilities including gas stations, farm and ranch supply facilities, etc.

Chlorine Releases

Chlorine leaks or releases into the atmosphere were identified at the steering committee as an issue in Sidney, particularly with the public swimming pool. Although this may have been a potential issue in the past, the chlorination of water is now maintained by the public works department (rather than at the swimming pool). It is not considered a major issue by the County DES Coordinator, nor was it identified as a major risk at the steering meeting.

Hydrogen Sulfide

Hydrogen Sulfide (H₂S) is a colorless, poisonous gas that smells like rotten eggs (from the sulphur). It is found in petroleum and natural gas and is sometimes present in ground water. It was identified as an issue in Richland County because of the pipelines and oil and gas development.

At high exposures H₂S causes the nose to stop perceiving its smell after a few inhalations, which may lead to the inhalation of a toxic or fatal dose, particularly if the individual is within a poorly ventilated location.

Historic Occurrences

The National Response Center is the national point of contact for reporting oil and chemical spills in the United States. Data for Richland County from the National Response Center for the period 1990 to 2004 indicated a total of 21 reported incidents, of which seven were fixed, 5 were mobile, and 4 were from pipelines. There were no reported chlorine releases during this period. There was one report of an H₂S release, and two reports of natural gas releases. (National Response Center)

Persons at the first steering committee meeting referenced an H₂S related accident prior to 1990 that resulted in several injuries and two deaths.

The Montana DEQ also keeps a data base of reported incidents. The data are organized somewhat differently than that of the National Response Center website. DEQ spill data for Richland County for the period from January 1997 through April 15, 2005 indicated a total of 49 spill reports (and four additional reports that resulted in no violation). Information was not readily available by type of incident (fixed, mobile, etc.), but did include type of spill. Of the 49 spills, 17 were crude oil, 11 were "other," 11 were diesel, other oil, gas, or other refined product, and 8 were production water. Fertilizer accounted for 2 spills. (Coleman)

The Montana Multi-Hazard Mitigation Plan listed two spills in Richland County among the largest in the state in the 10 years between 1993 and 2003:

Table 3.13 Spills in Richland County listed among Montana's 10 Largest (1993-2003)

Date/Location	Type Accident	Substance	Amount
12/28/00 Sidney	Vehicle Accident	Ammonium Nitrate	38,000 lbs
06/08/95 Fairview	Leaking Valve on Pipeline	Crude Oil	300 barrels

Source: Montana Multi-Hazard Mitigation Plan

Railroad accident statistics are maintained by the Federal Railroad Administration. Between 1975 and 2004, there were seven accidents. There were no injuries, but cars or locomotives were derailed in six of the seven incidents. There was no information on any hazardous materials associated with these accidents. (Federal Railroad Administration)

The Montana Department of Environmental Quality (DEQ) would be informed of any environmental hazard with a potential impact to the outdoor environment. They have received no contaminant reports for meth labs in the state that positively identify contaminants in the outdoors. Based on potential for effects, five septic systems in Montana have been tested thus far, but with no positive identification of any contaminants. (Coleman)

Vulnerability and Potential Loss Estimate

Richland County has generally moderate potential for future hazardous materials related accidents from both fixed and mobile sources. Richland County has some unique hazards related to oil and gas development and major processing facilities in the county. Daily traffic counts on major highways are less than at other locations in Montana, but other factors besides traffic volume play a role in hazardous materials incidents.

Hazardous materials incidents can result in:

- injury or loss of life
- damage to structures (e.g., explosions)
- business interruption (e.g., during evacuations)

Between 1982 and 1991, there was an annual average of 6,774 hazardous materials transportation incidents nationwide that resulted in 10 deaths and 436 injuries. The most common type of transportation hazardous material incident is from highway crashes, followed by railroad incidents. (Montana Multi-Hazard Mitigation Plan)

The Billings Gazette cited statistics from the Association of American Railroads that 99.99% of hazardous materials that travel by rail make it safely. (February 28, 2005) Still the small percent can result in serious consequences. For example, an April 1996 rail crash in Alberton, Montana, resulted in the second largest chlorine spill in the history of the nation. One death and the evacuation of 1,000 people resulted. In February 1998, 48 rail cars rolled backward and downgrade into Helena. The crash caused an explosion that forced the evacuation of 2,000 people and cost \$6 million. (Montana Multi-Hazard Mitigation Plan)

In Richland County, the seven train-related incidents between 1975 and 2004 resulted in costs for equipment and track damage ranging from approximately \$6,000 to \$32,000 for a single incident. (Federal Railroad Administration) Any costs of hazardous materials clean-up, if any was needed, would have been additional.

The Sidney Public Works Director indicated that sewer facilities can be vulnerable to hazardous materials. For example, a methane gas explosion caused by cleaning solvents resulted in damage to waste water lines that cost \$28,000 to replace and additional costs to repair the city street surface for the distance of approximately one block. (Meldahl)

Potential losses can vary from relatively small spills and leaks to major events. Clean-up and damages are typically borne by the responsible party, but in some cases, effects can be widespread and far-reaching with public cost implications.

A single incident can have serious effects. Richland County is already known to have had deaths and injuries related to a hazardous substance (H₂S). Economic costs could be in millions of dollars as illustrated above.

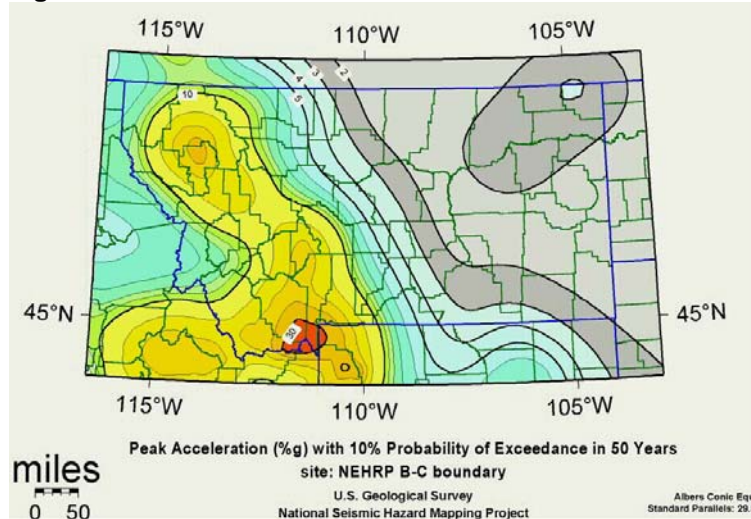
Earthquakes

An earthquake is “a sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of Earth’s tectonic plates. Common effects of earthquakes are ground motion and shaking, surface fault ruptures, and ground failure.” (Understanding Your Risks)

The FEMA guidebook “Understanding Your Risks: Identifying Hazards and Estimating Losses” recommends that if there is an area of 3% g peak

acceleration or more then the hazard should be profiled more closely. Earthquake severity is often expressed as a comparison to the normal acceleration due to gravity and is expressed as “g” force. A 100% g earthquake is very severe. The oblong shape in the northeastern corner of Montana is a band of 3% g peak acceleration. A portion of this area cuts across northwestern Richland County.

Figure 3.5 Peak Acceleration Values in Montana.

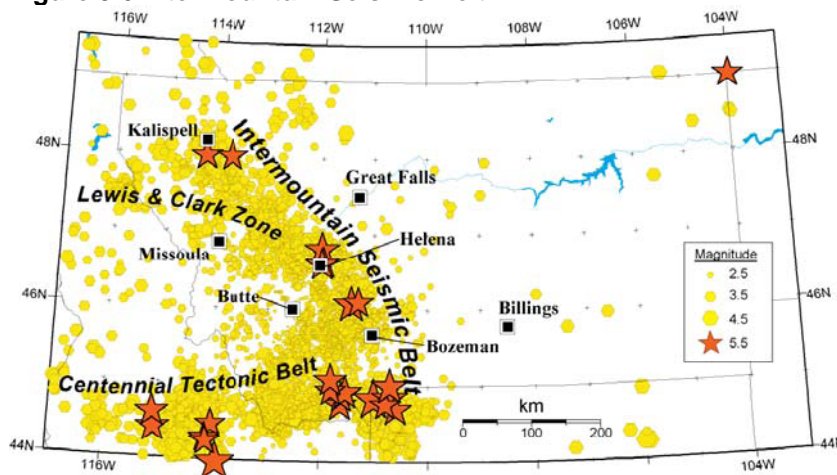


Source: Montana Multi-Hazard Mitigation Plan

Historic Occurrences

Only one earthquake of a magnitude of 5.5 (Modified Mercalli Scale) or greater has been recorded in the northeastern part of Montana since 1900. The most seismically active portion of the state is in the southwestern Montana as shown in Figure 3.5. Figure 3.6 shows smaller historic earthquakes in northeastern Montana. (State of Montana Multi-Hazard Mitigation Plan)

Figure 3.6 Intermountain Seismic Belt.



Source: Montana Multi-Hazard Mitigation Plan

Vulnerability and Potential Loss Estimate

Earthquakes will continue to occur in Montana, however the precise time, location, and magnitude of future events cannot be predicted.

The Montana Multi-Hazard Mitigation Plan identifies earthquake losses for the 10 Montana counties with the highest potential for earthquake damage. All of these counties were in the western portion of the state. Annualized loss estimates ranged from \$225,000 in Madison County to \$2.3 million in Gallatin County. Estimates were made using the HAZUS (beta v 28.b) Earthquake model developed by the Federal Emergency Management Agency (FEMA).

The Montana Multi-Hazard Mitigation Plan identified Richland County's potential for an earthquake to have less probability of occurring than in Madison County. Therefore, the annualized loss estimate for Richland County as a result of an earthquake would be less than \$225,000. (State of Montana Multi-Hazard Mitigation Plan).

Volcanic Eruptions

The state of Montana is within a region with potential for volcanic activity. The two volcanic centers affecting Montana in recent geologic time are: 1) the Cascade Range of Washington, Oregon and California; and 2) the Yellowstone Caldera in Wyoming and eastern Idaho.

Volcanic eruptions are generally not a major concern in Montana due to the relatively low probability (compared with other hazards) of events in any given year. Volcanic eruptions in the Cascade Mountains are more likely to impact Montana than Yellowstone eruptions, based on the historic trends of past eruptions. (Montana Multi-Hazard Mitigation Plan)

The primary effect of the Cascade volcanic eruptions on Montana would be ashfall. According to the Montana Multi-Hazard Mitigation Plan, ashfall can create significant damage including:

- Short-circuiting and causing failure of electronic components, especially high-voltage circuits and transformers
- Interrupting or preventing radio and telephone and radio communication
- Damage to air filters and affecting internal combustion engines
- Making roads, highways, and airport runways slippery and treacherous
- Reducing visibility to near 0
- Causing crop damage depending on the thickness of ash, type and maturity of plants, and timing of subsequent rainfall.
- Posing health risks, especially to children, the elderly, and people with cardiac or respiratory conditions

Historic Occurrences

After the eruption of Mount St. Helens in May 1980, a coating of up to 5.0 mm (0.2 inches) of ash fell on western Montana. Ash deposits were thickest in the western portions of the state, tapering to near zero on the eastern part of the state. (Montana Multi-Hazard Mitigation Plan)

Vulnerability and Potential Loss Estimate

The Montana Multi-Hazard Mitigation Plan assesses vulnerability as follows:

Due to the numerous variables involved, it is difficult to assess the vulnerability of the State of Montana to a volcanic eruption. The primary hazard to which the State may be vulnerable at some future time, is ashfall from a Cascade volcano. The effect would depend on the interaction of such variables as source location, frequency, magnitude and duration of eruptions, the nature of the ejected material and the weather conditions. Therefore, the entire state may be considered vulnerable to ashfall to some degree in the event of a volcanic eruption.

Although the probability is minimal, there is the potential for a catastrophic eruption in the vicinity of Yellowstone National Park that would have very serious consequences for Montana and neighboring states. Again, assessing the vulnerability of the State to such an event is impossible due to the numerous variables and uncertainties that must be considered.

Costs of a major ashfall event could be in the millions. It is estimated that the ashfall cost Missoula County nearly \$6 million in cleanup and lost work time. The statewide cost has been estimated at between \$15 and \$20 million. (Montana Multi-Hazard Mitigation Plan)

LANDSLIDES

Richland County includes areas with potential for landslides. The term landslide, as used in the Montana Multi-Hazard Mitigation Plan, includes “all types of gravity-caused mass movements of earth material, ranging from rock falls, slumps, rock slides, mud slides, and debris flows.” (Montana Multi-Hazard Mitigation Plan)

Earth movement most commonly occurs as the almost imperceptible slow creep of soil down gentle slopes, but it also can occur as catastrophic landslides. Landslides can damage and destroy homes, farm/ranch and commercial/industrial facilities, roads, railroads, pipelines, electrical and telephone lines, mines, oil wells, annals, sewers, bridges, and dams. In landslide-prone areas, anything affecting slope conditions such as seismic

activity or increased soil moisture may cause movement or may reactivate prior movement. (Montana Multi-Hazard Mitigation Plan)

As identified by USGS, most of Richland County has a low incidence of landslides. A band along the eastern boundary of the county is identified as moderate susceptibility-low incidence, and another area in the north along the Missouri River is identified high susceptibility-moderate incidence.

Historic Occurrences

There have been areas in the northern part of the county where county roads have been closed because hillsides have slid onto the roadway (Renders).

Vulnerability and Potential Loss Estimate

There is potential for future landslides in Richland County. Potential for future events is low to moderate based on the USGS classifications of incidence.

There is no statewide or national inventory of landslides, but nationwide, landslides are estimated to result in annual losses of approximately 25-50 lives and \$1-2 billion annually (Montana Multi-Hazard Mitigation Plan). The largest landslide in the history of Montana was caused by the 1959 Hebgen Lake Earthquake. Nearly 1.25 miles of the Madison River and Highway 287 were buried to depths as great as 394 feet. In May 2005, mudslides damaged 13 sections of the Beartooth Highway in Carbon County, resulting in \$20.4 million in repairs (Billings Gazette, July 30, 2005). Indirect costs to the businesses in Red Lodge, Cooke City and Silver Gate that rely on summer tourist dollars have not been calculated but was reported to have been seriously affected (particularly in Cooke City and Silver Gate). (Various articles in Billings Gazette, summer 2005)

The area in Richland County with highest susceptibility is also identified as having a moderate incidence level. This area is rural and does not include any communities. Some rural residences and farm structures may be at risk. Roads in the area would also be at risk and repairs could be costly. Cost of building county roads was estimated at \$90,000 per mile (see Assets section below).

Assets and Vulnerable Populations that Could Be Affected

This section provides more information on physical, social, and economic assets in Richland County that might be affected by a hazard. With the exception of the mapped 100-year floodplains, the identified hazard area is the entire county—any hazard might strike just about anywhere in the county. Some hazards, such as snowstorms, can extend throughout the county, whereas others, such as tornadoes, are more localized.

Any hazard might affect any of the approximate 10,000 persons living in the county, or any of the 4,557 housing units in Richland County, (of which approximately 400 are in Fairview and 2,400 are in Sidney), the estimated 400 private non-farm business establishments, or 587 farms in Richland County.

Future growth in Richland County in the next 2-5 years will likely be associated with oil and gas activity. Participants in the planning process did not identify any other major future building, infrastructure, or critical infrastructure projects.

In addition, a disaster could affect **critical facilities**, facilities essential to health and welfare and especially important following hazard events. Critical facilities include medical facilities, transportation systems, utility systems (such as potable water and wastewater distribution systems), and high potential loss facilities (including major employers and facilities important to the county's economy).

Social assets include **vulnerable populations**, people who may be at special risk for a hazard. Identifying these populations assists in providing emergency assistance if and when it may be needed during a disaster.

Richland County Court House



Photo from Cossitt Consulting

Critical Facilities

Table 3.14 identifies critical facilities in Richland County and their estimated replacement value in the event of a complete loss. It is intended to provide an initial yardstick measurement of loss because actual damages could range from relatively minor damage to complete destruction, and interruption of service or business. Costs of providing services in temporary locations and loss of business revenue would be additional to the replacement costs.

Table 3.14 Critical Facilities in Richland County

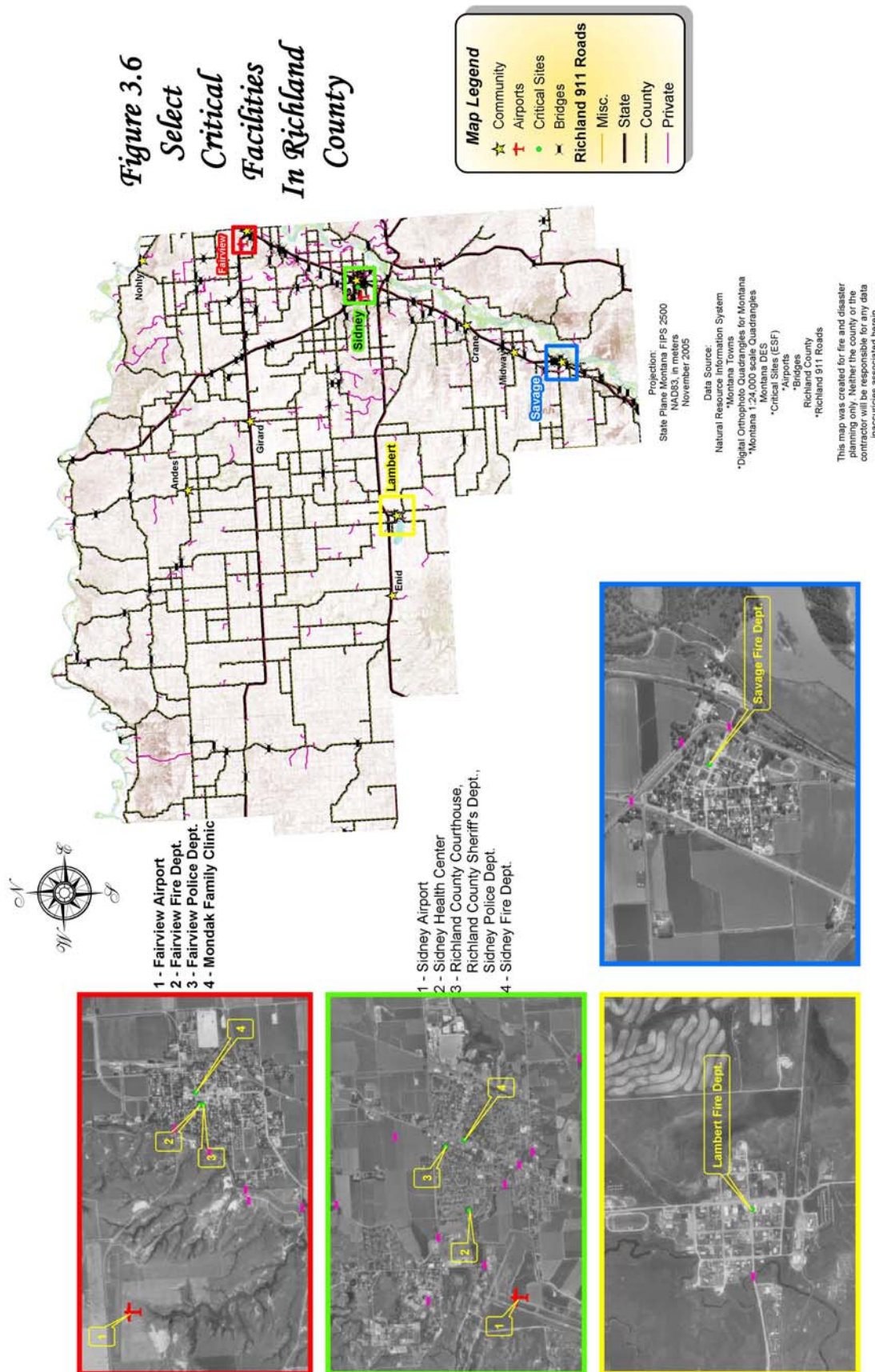
Description	Insured/Replacement Value	Notes
Health/Senior Facilities		
Sidney Health Center	\$42 million	Includes the nursing home portion of the hospital
Lodge at Lone Tree Creek	\$3 million	Operated by Sidney Health Center (not including residents' personal property contents)
Savage Senior Housing	\$625,000	(not including residents' personal property contents)
Crestwood Inn (Sidney)	\$4.6 million	(not including residents' personal property contents)
Major Employment Facilities		
Lewis and Clark Electric Generation Facility	\$100 million	
Sugar Beet Plant	\$300 million	
Anheuser Busch Facility	\$13.5 million	Facility and contents assuming storage is full (holds 1.5 million bushels of grain)
USDA Research Facility	\$50 million	
Schools		
Sidney High School	\$8.2 million	456 students
Sidney Jr. High School	\$7.2 million	207 students
Sidney Central School	\$6.2 million	452 students
Sidney West Side School	\$4.8 million	100 students
Lambert Public School	\$4.1 million	94 students
Savage Public School	\$4.6 million	129 students
Fairview Public School	\$1.6 million	237 students
Brorson Elementary School	\$1.5 million	9 students
Rau Elementary School	\$1.8 million	60 students
Richland County Operations		
Court House	\$4.7 million	
Law Enforcement Building	\$1.9 million	
Library	\$2.6 million	Includes the county's Emergency Operation Center
County Shop	\$1.2 million	
Airport	\$856,000	
County Roads	\$90,000 mile	
Bridges	\$180,000	For a typical 60' bridge on a county road

City of Sidney Operations		
Sewage Lagoons	\$8-\$12 million	
Sewage collection	\$9.1 million	165,000 linear feet of line
Water Towers	\$1.5 million	
Bridges	\$600,000 each approx.	Based on 2000 replacement cost of 9 th Avenue Bridge
Description	Insured/Replacement Value	Notes
City Shop Complex	\$870,000	
City Hall	\$373,000	
Fire Hall	\$380,000	
City Solid Waste Containers	\$50,000	
Streets	\$306,000/mile	Cost to build/re-build new streets, not including cost of curb and gutter
Town of Fairview Operations		
Town Hall	\$196,000	
Water Treatment/Storage	\$373,000	
Water Tower	\$257,000	
Fire Station	\$361,000	
Irrigation Facilities		
Lower Yellowstone Irrigation Project	\$10,000 per feature/location	Based on the 1997 flood damage that cost \$89,900 to repair in 9 locations
Power and Communications		
Transmission line	\$25,000-\$28,000 per mile	For a three phase power line

Sources: Various facilities, local governments, etc.

Notes:

- Replacement values include contents wherever that information was available
- For values less than a million dollars, numbers rounded to thousands



Sidney Sugar Plant



Photo from Cossitt Consulting

Business-Related Loss Potential

None of the major employment facilities are located within an area with history of flooding or in a designated mapped 100-year floodplain. The hazards with most potential to cause significant damage are tornadoes, high wind events, or hazardous material-related explosions. Generally speaking, if a major facility has a long-term interruption in business as a result of damages, there will be secondary results including interruption of employment, etc.

Sidney Sugar has especially strong potential secondary impacts since Richland County is one of the number one producers of sugar beets in Montana (ranked #1 in 2003). If the sugar processing facility were destroyed, it would have serious repercussions for producers in Richland and surrounding counties. Producers would be unable to transport their sugar beet crop to another facility because shipping costs would make it economically infeasible. It would take at least two years to rebuild the facility and the economic impacts would include the loss of sugar beet related income for producers during that period.

Damage to the Lewis & Clark Electric Generating Station, which generates an average of 250,000 megawatts of electricity annually, could affect power users in and out of the county. In addition, it could affect production at the Knife River Coal Company in Richland County which supplies the plant with about 230,000 tons of coal each year.

Power and Communication Loss Potential

Hazards most likely to cause serious damage to power and communications facilities are those that will affect overhead transmission. The key hazards are high winds and ice. Flooding can affect a pole or poles in a few places, but high winds and ice can take out hundreds of poles at a time.

In Sidney, the power to run the water and sewer system is about at maximum capacity. There is a single main power line into Sidney, so there is also concern that if it were to go down, temporary power sources would be the only back up.

Vulnerable Populations

The following were identified by the steering committee as populations that may require special care or assistance during or after a disaster:

- People at risk medically
- Homebound
- Schools
- Day care facilities
- Small isolated communities
- Senior care/Assisted Living Facilities
- Low income persons
- Emergency Service Providers

People at Risk Medically and Homebound

Currently, there is no roster in the county of non-institutionalized (e.g., hospitalized or in a nursing home or assisted living facility) persons with medical issues. Developing such a list and maintaining it is a major undertaking and one that has begun through the collective efforts of the Richland County Emergency Preparedness division of County Public Health, CERT (Citizen Emergency Response Team) and the RSVP Program.

The 2000 census reported that there were 1,484 non-institutionalized persons in Richland County with a disability.

Schools

According to the 2000 census, there were 2,399 school children (3 years of age in pre-school through high school) in Richland County. Schools are listed in Table 3.14.

Child Care Facilities

Child care and pre-school facilities registered in the county as of May 2005 are included in Table 3.15.

Table 3.15 Child Care and pre-school facilities in Richland County, May 2005.

Name	Location
Other Grandmas	Fairview
Linda Kohlman	Fairview
Handprints and Heartprints	Sidney
Swensen's Preschool	Sidney
Small World Preschool	Sidney
Busy Beaver Preschool	Sidney
Merilee Anderson	Sidney
Fellowship Baptists DC	Sidney
Kidz Korner	Sidney
Joy Johnson	Sidney
Isabel Means Daycare	Sidney
Sandra Papka	Sidney
Kathy Pemberton	Sidney
Little Angels	Sidney
Sue Pyfer	Sidney
Small World Daycare	Sidney
Carol Kunnerup	Sidney
Boys and Girls Club	Sidney

Source: Public Health Department

Small Isolated Communities

Approximately 4200 people in Richland County live outside of the two incorporated communities of Sidney and Fairview (based on 2000 census). Providing services during/after a disaster can be difficult, depending on weather and road conditions. In addition, these people may likely find themselves experiencing longer power outages than in other more populated areas.

Senior Care Facilities

Senior care facilities in Richland County include:

- Savage Sunrise Manor, Savage
- Crestwood Inn, Sidney
- Lodge at Lone Tree Creek, Sidney
- Extended Care at Sidney Health Center

There are senior centers in Fairview, Lambert, Savage, and Sidney.

Low Income Persons

Low income persons were identified as a vulnerable population because they may not have vehicles or other means to evacuate from disaster situations. In addition, it will be more difficult for low income persons to recover from disaster damages.

According to the 2000 census, 12.2% of all individuals in Richland County had incomes below the poverty level.

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CHAPTER 4: MITIGATION STRATEGY

This chapter identifies the “blueprint” for reducing losses associated with the hazards described in Chapter 3. The mitigation strategy for wildfire is addressed in Chapter 5.

This chapter includes:

- a short description of the **methodology** used to develop the mitigation strategy, which is also discussed to some extent in Chapter 2;
- the **Goals and Mitigation Actions**
- **Project Ranking and Prioritization** and
- **Implementation** and administration of the plan

Methodology

The initial goal statements and a preliminary list of projects were formulated at the steering committee meeting/public meeting held in Sidney on April 25, 2005.

After an overview of the hazard risk assessment, the facilitator asked meeting participants to consider goals to address the hazards, starting with the highest priority hazards identified at the previous meeting. Participants discussed a variety of mitigation actions, and some were eliminated because they had no support. Participants discussed feasibility, technical difficulties, and other considerations as they worked through the goals, objectives, and projects.

Goals and projects were drafted as presented in this chapter during the meeting held in Sidney on May 23, 2005. With the exception of projects specific to Sidney and Fairview, all projects were prioritized during the May 23 meeting. Priorities for Sidney and Fairview were established via phone conversations between Anne Cossitt and town officials.

Goals and Mitigation Actions

The following goals were developed in response to the hazards of most concern to residents of the county.

Participants felt that the best way to reduce the effects of a number of hazards was to provide preparedness information to residents. Summer storms, hail, wind events, power outages, ice storms, tornadoes, and earthquakes all basically fell into this category. Projects for these types of hazards fall under Goal Two: “Expand capabilities to prepare for and respond to natural disasters.”

The following projects would be for both new and existing buildings and infrastructure where applicable. For example, assessing road capacity to handle

flood events would apply to existing public roads as well as any new public roads that may be developed in the future.

The incorporated jurisdictions of Sidney and Fairview have essentially the same risk as elsewhere in the county for most hazards. There are, however, some unique differences for these two incorporated areas compared to the county as a whole.

Unique risk factors for Sidney and concerns related to emergency/disaster response identified in the planning process included:

- Power supply. There is only one main power line into the city. If that is cut off, there is no power. In addition, city officials expressed some concern that power supply for water and wastewater systems may be just about at maximum now.
- Unique flooding issues. Potential for flooding along Lone Tree Creek and location of sewage lagoons near the Yellowstone River. There are also occasional storm drainage problems in other areas of town.
- Potential for transportation related accidents/hazardous materials spills. With railroad tracks and truck traffic through town, there is concern about transportation-related accidents.

Unique risk factors and concerns for Fairview included:

- Need for an Emergency Operations Center.
- Concerns about water supply safety and potential for harm from vandalism or other acts.
- Potential for transportation-related hazardous materials spills (highway and railroad).
- Potential for town to be without power.

The following goals, objectives, and mitigation projects are addressed at hazards that can be experienced throughout the county as well as those unique to the municipalities of Sidney and Fairview.

Goal One: Minimize the economic impacts of drought and water shortages.

Objective 1: Understand the existing water supply and potential long-term effects of drought in Richland County.

Mitigation Actions/Projects:

- 1.1.1 Develop baseline information on water supply and water use in Richland County.

Objective 2: Prepare in order to minimize effects of drought and water shortages.

Mitigation Actions/Projects:

- 1.2.1 Encourage coordination among major water suppliers, water managers, and users in the county (e.g., conservation districts, towns, MDU, and others) to share information and plans for drought.
- 1.2.2 Provide education on water conservation measures for urban residents as well as agricultural producers. (This could include information on effects to aquifers in other locations, such as the Ogallalla aquifer.)
- 1.2.3 Support continued flexibility on use of CRP lands to reduce hazard fuels and provide economic relief to drought-affected producers.

Goal Two: Expand capabilities to prepare for and respond to natural disasters.

Objective 1: Expand understanding and use of weather radios.

Mitigation Actions/Projects:

- 2.1.1 Ensure that critical facilities have operating weather radios.
- 2.1.2 Expand use of weather radios by the general public:
 - Provide education about how to use and where to purchase
 - Work with local suppliers to provide discounts for weather radios (e.g., sell at cost)

Objective 2: Reduce the effects of power outages.

Mitigation Actions/Projects:

- 2.2.1 Assess back-up power for communication facilities to ensure that warning systems and communications work during power outages.
- 2.2.2 Ensure that there is adequate power and back-up in the towns of Sidney and Fairview.
 - Address the potential for power supply shortages in Sidney and Fairview.
 - Work to ensure backup power for vital infrastructure (such as the water wells) and essential services.

Objective 3: Continue to provide public education on preparing for disasters: (Resources could include working with the media—newspapers, radios, etc. on psa's, Note that county law enforcement are updating an informational brochure on various emergencies and they could include weather and other disaster preparedness information.)

Mitigation Actions/Projects:

- 2.3.1 Provide information on warning systems—what they mean, and what to do.
- 2.3.2 Educate the public on how to get information during a disaster (e.g., weather radios, transistor radios, other).
- 2.3.3 Provide information on various types of disasters and how to prepare for them (e.g., what you need in your vehicle or home to respond to power outages, winter storm situations, severe thunderstorms, high winds, etc.)

Objective 4: Reduce effects of disasters on high risk populations.

Mitigation Actions/Projects:

- 2.4.1 Identify and implement the best mechanisms to reduce impacts to high-risk populations when they are stranded in their homes or when they are without power critical for health maintenance (e.g., oxygen, etc.) (Note that this has already been initiated by the county public health department in collaboration with others including CERT and RSVP.)

Objective 5: Expand the capabilities of Fairview to respond to emergencies and disasters.

Mitigation Actions/Projects:

- 2.5.1 Identify and develop a location that could be used as an Emergency Operations Center in Fairview.
- 2.5.2 Ensure that Fairview has a sustainable water supply by fencing the town's water supply tank (e.g., to prevent problems with vandalism)

Goal Three: Mitigate the potential loss of life, property, and infrastructure from flooding.

Objective 1: Minimize risks associated with flooding on Lone Tree Creek.

Mitigation Actions/Projects:

- 3.1.1 Continue to investigate potential for flood controls (e.g., dam) on Lone Tree Creek. (Consider options that would increase flood control measures and partnerships and other mechanisms to reduce the liability of the dam owner if possible.)
- 3.1.2 Develop a regular monitoring and protocol for ensuring that Lone Tree Creek drainage can free-flow (is not obstructed with debris, brush, etc.)
- 3.1.3 Identify the risks of the sewer line across Lone Tree Creek and develop appropriate mitigation.

- 3.1.4 Work with Montana Department of Transportation to identify flood-damage risk and mitigation as necessary for the Highway 16 bridge across Lone Tree Creek.

Objective 2: Reduce effects of flooding on public infrastructure.

Mitigation Actions/Projects:

- 3.2.1 Continue to assess standards for rebuilding roads, bridges, etc. in areas that experience multiple flood events.
- 3.2.2 Examine options for flood-proofing the sewage lagoons in Sidney and Savage, which could be threatened by Yellowstone River flooding.

Objective 3: Reduce potential for dam failures and related flooding.

Mitigation Actions/Projects:

- 3.3.1 Facilitate information from Montana DNRC and other sources to area dam owners about dam maintenance and responsibilities.
- 3.3.2 Assist with identifying funding options for dam owners to make improvements as needed for downstream safety.

Objective 4. Examine options to address issues related to the storm drain pipe that channels storm water flow from Sidney at a single point under the railroad tracks.

Mitigation Actions/Projects:

- 3.4.1 Assess the need to enlarge the storm drain pipe size.
- 3.4.2 Assess methods to reduce ice from forming and creating jams for storm water flow.
- 3.4.3 Work with the railroad to develop the necessary drainage improvements along their right-of-way.

Goal Four: Reduce impacts of severe winter storms.

Objective 1: Improve information to the public about winter storm conditions and travel routes.

Mitigation Actions/Projects:

- 4.1.1 Investigate options for reporting weather conditions aimed at travelers throughout the county (e.g., commuters between Richland County and Glendive).
- 4.1.2 Identify and mark snow routes and schedules and publicize the information.

Goal Five: Reduce potential for impacts of transportation-related hazardous materials spills.

Mitigation Actions/Projects:

5.1 Identify an alternative truck bypass route for Sidney.

Project Ranking and Prioritization

Ranking projects helps to set the local priorities for accomplishing the plan. Resources to accomplish objectives can be limited in any planning process. Prioritizing helps to identify which projects to start on, given that there are typically far more projects than can be addressed at any one time.

The mitigation projects were prioritized by the participants at the final planning meeting held on May 23, 2005, in Sidney. Participants at that meeting decided that a few projects, specific to Sidney and Fairview, should be prioritized by those communities. Staff from both Sidney and Fairview prioritized projects prior to release of the document for public review in the Fall of 2005.

Projects were ranked by high, medium, or low, by consensus of the meeting participants based upon subjective assessment against the following criteria:

- Number of lives at risk
- Value of property at risk
- Infrastructure at risk
- Risk of business interruption/loss
- Cost/benefit of the project.

Table 4.1 displays the mitigation actions and the priorities assigned to each, as well as potential resources for implementing the action.

Table 4. 1. Mitigation Project Prioritization

<i>Project Number</i>	<i>Project description</i>	<i>Rank</i>	<i>Potential Resources</i>
GOAL ONE	Minimize the economic impacts of drought and water shortages.		
1.1.1.	Develop baseline information on water supply and water use	H	County, Towns, MT Dept. of Natural Resources and Conservation (DNRC), Irrigation Companies, Extension, DES,
1.2.1	Encourage coordination among water suppliers, water managers, and water users	M	Public water suppliers (towns, other public systems), irrigation companies, conservation district, farmers/ranchers, major industrial water uses (e.g., MDU), DNRC
1.2.2	Provide education on water conservation measures	H	County, towns, Agricultural Extension, schools
1.2.3	Support continued flexibility on CRP land use to reduce hazard fuels and provide relief to drought-affected producers	L	County Commissioners, Conservation Districts
GOAL TWO	Expand capabilities to prepare for and respond to natural disasters.		
2.1.1	Ensure critical facilities have NOAA weather radios	H	County, towns, County Public Health, DES, FEMA
2.1.2	Expand use of NOAA weather radios by the general public	M	Town, County, County Public Health, DES, FEMA
2.2.1	Assess back-up power to ensure that warning systems and communications work during power outages	H	County, towns, DES, power companies
2.2.2	Ensure adequate power and back-up in the towns of Sidney and Fairview	H	Towns, DES, County Public Health
2.3.1	Provide information on warning systems	H	County, towns, DES
2.3.2	Educate the public on how to get information during a disaster	H	County, towns, DES, CERT
2.3.3	Provide information on various types of disasters and how to prepare	M	County, towns, DES, FEMA

<i>Project Number</i>	<i>Project description</i>	<i>Rank</i>	<i>Potential Resources</i>
2.4.1	Identify and implement best mechanisms to reduce disaster impacts to high-risk populations	H	County Public Health, Health facilities, CERT, RSVP, senior centers
2.5.1	Identify an Emergency Operations Center for Fairview	H	Fairview, DES, FEMA, CERT, Red Cross
2.5.2	Fence the town of Fairview's water storage tank	M	Fairview, DES
GOAL THREE	Mitigate the potential loss of life, property, and infrastructure from flooding.		
3.1.1	Continue to investigate potential for flood controls on Lone Tree Creek	M	Sidney, private landowners, DES, FEMA, DNRC, Floodplain Administrator
3.1.2	Develop a regular protocol for ensuring that Lone Tree Creek can free-flow	H	Sidney, private landowners, DES, FEMA, Floodplain Administrator
3.1.3	Identify and mitigate risks of sewer line across Lone Tree Creek	H	Sidney, DES, FEMA, Floodplain Administrator
3.1.4	Identify and mitigate flood-damage risk for the Highway 16 bridge across Lone Tree Creek	H	Montana Dept. of Transportation, Sidney, DES, FEMA, Floodplain Administrator
3.2.1	Continue to address standards for rebuilding roads in areas subject to flood events	H	County, towns, DES, FEMA
3.2.2	Flood-proofing as necessary the sewage lagoons in Sidney and Savage	H	Sidney, DES, FEMA, Floodplain Administrator
3.3.1	Facilitate information to dam owners about dam maintenance and responsibilities	M	County, DES, DNRC, dam owners
3.3.2	Assist with identifying funding options to make dam improvements as needed for safety	M	County, DES, DNRC, FEMA, dam owners
3.4.1	Assess need to enlarge storm drain pipe size in Sidney.	M	Sidney, DES, FEMA
3.4.2	Assess methods to reduce ice jams from forming along city drainage areas in Sidney.	M	Sidney, DES, FEMA
3.4.3	Work with the railroad to develop necessary drainage improvements along their right-of-way in Sidney.	H	Sidney, DES, FEMA
GOAL FOUR	Reduce impacts of severe winter storms.		
4.1.1	Investigate options for reporting weather conditions for travelers (e.g., commuters between Richland County and Glendive)	M	Richland County, Dawson County, DES, FEMA, NOAA
4.1.2	Identify and mark snow routes and publicize	H	County, towns

<i>Project Number</i>	<i>Project description</i>	<i>Rank</i>	<i>Potential Resources</i>
GOAL FIVE	Reduce potential for impacts of transportation-related hazardous materials spills.		
5.1	Identify an alternative truck by-pass route for Sidney.	H	Sidney, Montana Department of Transportation

Notes: "Towns" refers to the incorporated communities of Sidney and Fairview

Project Implementation

The projects listed above are the means by which Richland County, Sidney, and Fairview intend to realize the goals to become more disaster resistant. Accomplishing the projects will be dependent on funding, staff, and technical resources from a variety of sources including the town, the county, the state and federal government, not-for-profits, and the business community.

Some of the projects can be undertaken by the county within existing resources. Examples include the projects to provide education about how to use and where to obtain weather radios, and providing public education on preparing for various types of disasters. These projects could be accomplished by the County DES Coordinator by using educational materials already available from FEMA, NOAA, or other government and agency websites (e.g., Federal Alliance for Safe Homes, Institute for Business and Home Safety, etc.). Some of the websites have ready-to-send news releases on various types of disasters.

Some of the projects for Sidney and Fairview can be initiated within existing resources. For example, the Sidney city public works department already has a program where it cleans out storm drains. Both towns could develop short Public Service Announcements for radio and press that provide information on warning siren systems.

Some of the projects will require additional funding beyond the existing financial resources of Sidney, Fairview, or Richland County. Projects that will require additional outside funding include identifying (and developing) an alternative truck by-pass in Sidney, developing an emergency operations center in Fairview, and flood-proofing as necessary the sewage lagoons in Sidney and Savage.

Some of the projects will require a public-private partnership to accomplish or will be enhanced by such a partnership. The county and town could work with insurance companies and power providers to provide information on preparing for various weather events (hail, lightning, winter storms) and power outages. Examples include notices and information that could be included with billing statements. Other projects will absolutely require private sector participation in order to be effective. Examples include the project to develop baseline information on water supply and use, the project to encourage various entities to address and share their plans and policies for drought-related measures, the

project to work on Sidney storm drainage along the railroad right-of-way, and the project to work to provide safety-related information to private dam owners.

Some projects may require expertise not available in the county. For example, identifying an alternative truck route will likely necessitate technical expertise that meets Montana Department of Transportation requirements.

For flood control projects, the county and towns will work with FEMA to identify cost-effective and technically feasible mitigation and to assure continued compliance with the National Flood Insurance Program.

Projects will be accomplished as resources, either at the local, state or federal levels, become available. Implementation of the plan will be the responsibility of the LEPC and the Richland County Disaster and Emergency Services Coordinator acting on the behalf of Sidney, Fairview, and Richland County. Plan implementation also depends on the willingness of private individuals and corporations, and not-for-profit organizations such as the American Red Cross to participate in specific mitigation actions and projects.

In selecting projects to compete for funding, whether it is existing internal funding or funding from state and federal sources, emphasis should be placed on the relative benefits compared to the cost of the project. Criteria such as number of people educated or protected and the dollar value of assets mitigated from potential hazards should be considered and weighed. Where possible a basic cost benefit and/or value analyses should be completed during the planning of the project.

Richland County and the incorporated communities of Sidney and Fairview understand that while completion of the plan will make them eligible to compete for additional funds, it is in the best interests of the local jurisdictions and residents to proceed with those projects that can be done within existing resources while exploring avenues to obtain assistance for those projects beyond local capabilities.

CHAPTER 5: COMMUNITY WILDFIRE PROTECTION

Richland County, Montana

Community Wildfire Protection Plan Approval Signatures

Richland County Fire Warden ~~Warden~~ MARSHAL
Date: 10-27-05


Rob Gilbert

Fairview Fire District, Chief
Date: 10-27-05


Tim Denowh

Lambert Fire District, Chief
Date: 10-27-2005


Brian Ligon

Savage Fire Department, Chief
Date: 11/02/05


Marshall Vojacek


Sidney Volunteer Fire Department, Chief
Date: 11/3/05


Kenneth Volk

Richland County Disaster and Emergency Services Coordinator
Date: 10-27-05


Butch Renders

Dept. of Natural Resources and Conservation, Eastern Area Land Office,
Area Manager
Date: 11-30-05


Rick Strohmyer

CHAPTER 5: COMMUNITY WILDFIRE PROTECTION

Executive Summary

This Community Wildfire Protection Plan (CWPP) was prepared as a part of Richland County's pre-disaster mitigation plan for the purpose of making the county more disaster resistant and better prepared to deal with wildfire when it strikes. The plan was written so that fire departments and other local government departments can use it as a stand-alone document, even though it is a chapter in the overall pre-disaster mitigation plan. The CWPP is written to meet the intent of the National Fire Plan objective to have communities or as in this case Richland County, assess the current situation and then develop and prioritize mitigation actions to address the values at risk. The plan takes the proactive approach of assessing risks and vulnerabilities, then identifying locally supported actions that can be implemented to prevent or eliminate the potential for loss and damage from a natural disaster. This plan meets the requirements for pre-disaster project funding and post-disaster assistance from the Federal Emergency Management Agency.

This CWPP is consistent with the national fire policy expressed in the National Fire Plan (NFP). The NFP was developed in August of 2000, "with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future." (www.fireplan.gov) The NFP has five key areas: 1) firefighting, 2) rehabilitation, 3) hazardous fuels reduction, 4) community assistance and 5) accountability. Federal agencies like the Bureau of Land Management are directed to assist communities that have been or are at risk from wildfire. The assistance for Richland County has come from the Rural Fire Assistance program in the form of funding for planning, training, equipment and education.

Collaboration between the local fire departments, DES Coordinator, local governments, Bureau of Land Management (BLM), Farm Services Agency (FSA) and Montana Department of Natural Resources and Conservation (DNRC) throughout this effort was key in producing this plan.

Richland County is located on the Montana-North Dakota border just above midway north and south on that border. The Yellowstone River runs through the eastern half of the county and the northern boundary of the county is the Missouri River. Relatively low elevation flat agricultural lands characterize the county with some badlands in the western portion. There are scattered state lands comprised of school sections and Montana Fish, Wildlife and Parks properties in the form of special management areas. The Bureau of Land Management occupies 51,601 acres of Federal land in the county.

Fuel types vary from large stands of grasses, crops such as a hay fields, sagebrush to scattered juniper to heavier concentrations of juniper in the western part of the county. Cottonwood bottomlands adjacent to the Yellowstone and Missouri rivers also present some unique fire situations. Fuel loading is light for most of the county. Wildfire ignitions in Richland County are both natural and human-caused. Ignition sources include lightning, rural residences (usually trash burning), farm equipment malfunction, recreational activity, especially fall hunting and railroads. The dry climate coupled with the recent years of drought, wind, flashy fuels and remoteness of the county contribute to the wildfire hazard. Poor access roads and long driving times often slow response times for the fire departments.

A fire protection plan has two distinct parts, 1) risk assessment and 2) mitigation of those risks. The risk assessment identifies fuel hazards, values, and assets. It also presents a synopsis of the fire protection preparedness of the county. The mitigation section identifies goals, objectives, and projects to reduce or mitigate the wildfire risk.

Methodology

This risk assessment and mitigation plan was developed by using the following steps:

Hazards were evaluated as follows:

1. Identify hazards that may occur.

- a. The contractor conducted meetings and discussions with community leaders (county commissioners, town officials and county DES Coordinator and other interested stakeholders) The first CWPP meeting was held separately prior to the PDM meeting. (See sign-in sheet for February 7, 2005) A Core Group was identified with the firefighters of the four departments in the county.

Table 5.1 Core Group Members

Name	Title
Marshall Vojacek	Chief, Savage Fire Department
Tim Denowh	Chief, Fairview Fire Department
Brian Ligon	Lambert Fire District
Rob Gilbert, Chair	Sidney Volunteer Fire Department

- b. This Core Group was established to give the contractor a team of firefighters to provide local information about hazards and review the information the contractor was to prepare. They also provided the values at risk. After the first meeting a list of hazards relative to wildfire were prepared by the contractor and sent to the Core Group for review and validation to be done at a second meeting. (see meeting notes, 2-7-05)

- c. Later the same evening the firefighters who had attended the CWPP meeting convened with the PDM meeting. A variety of interests that were in attendance at this meeting had an opportunity to provide input for the CWPP. The attendees provided examples of past wildfires and their concerns for future incidents. This group then agreed to allow the fire departments to focus on the CWPP portion of the PDM.
- d. The contractor facilitated a second meeting on March 28, 2005 (see sign-in sheet) and the priorities for protection were discussed and additional items and locations were added. (see meeting notes, 3-28-05) After the second meeting the firefighters prepared a base map which included the critical infrastructure, fire department and satellite unit locations, fire department areas of responsibility, wildland urban interface locations and key water sources/tanks.
- e. Subsequent phone conversations between the members of the Core Group and County DES Coordinator and the contractor helped to characterize the county's wildfire issues and fine tune information in the risk assessment.
- f. Research by the contractor of other plans, websites, reports and newspapers.
- g. The State of Montana's DES District 4 Representative, the BLM and DNRC all attended various PDM and CWPP meetings providing support, expertise and advice.

2. Prioritize the hazards.

- a. Hazards were given a preliminary priority at the first meeting.
- b. Input into the hazard identification was included from the PDM meetings.
- c. During the second CWPP meeting there were additions made to the list and priorities were finalized.

3. Profile hazard events.

- a. Through discussions with the Core Group and help from the DES Coordinator the most significant concerns for the county surfaced. Several key areas of higher probability were identified as well as some areas of potential life and property losses.
- b. Obtaining data on historical fires and their locations.

Mitigation measures were developed as follows:

A strategic plan was developed in the Mitigation Plan by gathering ideas and information from the CWPP Core Group, the PDM Steering Committee, the DES Coordinator and the contractor.

The draft CWPP-PDM document was made available in the offices of Richland County and the towns of Sidney and Fairview, the Richland County Library, County Extension Agent Office. The comment period was open for 30 days and

ended October 13, 2005. Following incorporation of the comments received, the plan was finalized.

Community Assessment

Area to be Evaluated

Richland County is located on the Montana-North Dakota border about midway north and south on that border. The Yellowstone River runs through the eastern half of the county. Relatively low elevation, flat agricultural lands characterize the county with some areas of badlands in the western portion. Elevations range from about 1800 to 2940 feet. There are scattered state lands comprised of school sections and Montana Fish, Wildlife and Parks properties. The Bureau of Land Management has 51,601 acres of Federal land in the county.

Sidney and Fairview are the only two incorporated communities in the county with populations of 5,217 and 709 respectively. Other communities include Savage, Lambert, Crane, Andes, Enid and Midway. All of the communities were ranked as moderated risk in the Communities at Risk in the Federal Register (Volume 66, #160, August 17, 2001). The Wildland Urban Interface (WUI) boundaries established by the fire departments follow the standard one half mile buffer around each community or other areas the county wishes to protect.

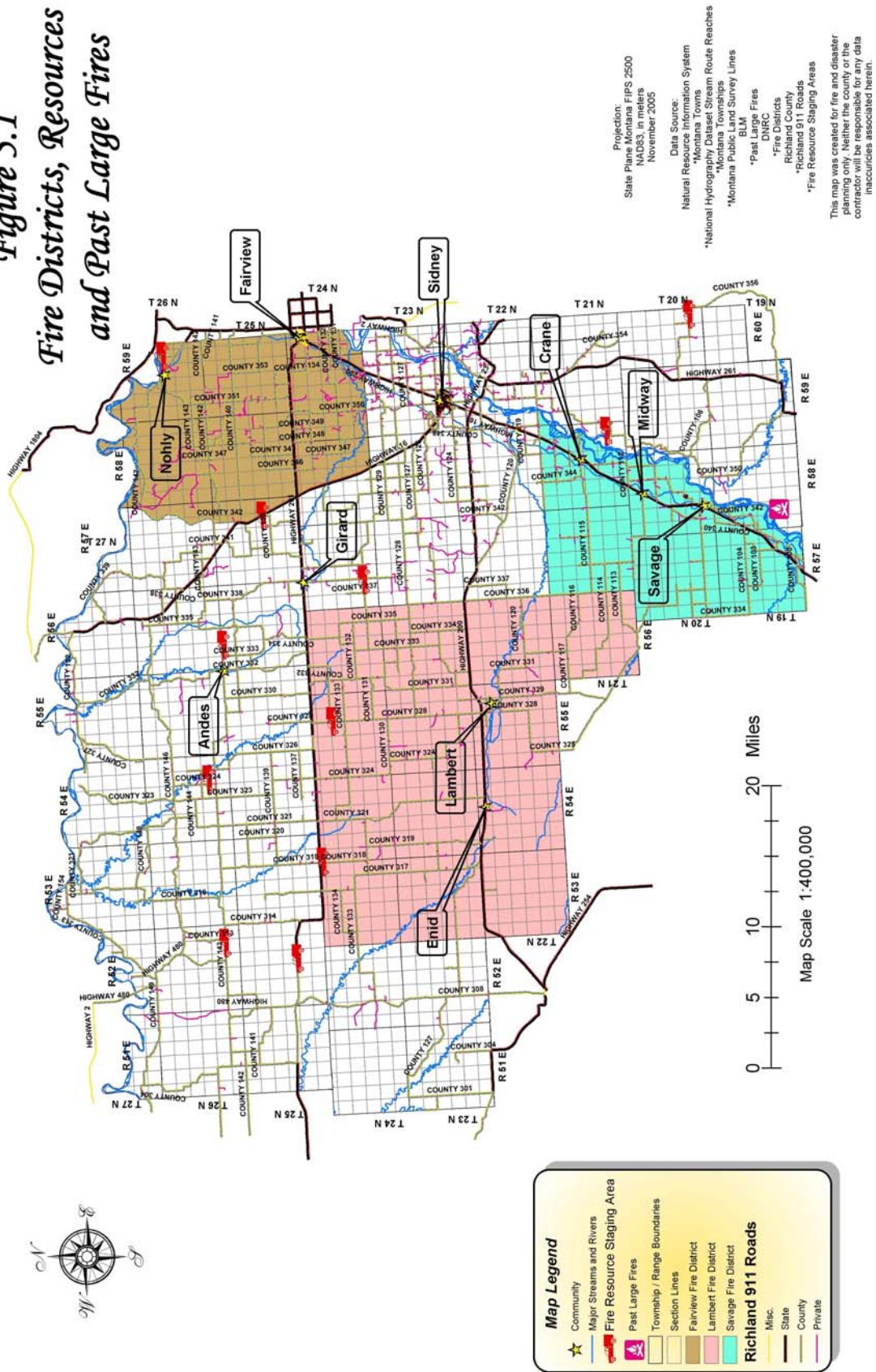
For more detailed information about the characteristics of Richland County please refer to Chapter 1 (PDM) of this plan.

Historic Occurrences

The average number of fires per year for the county is estimated at 45 that are responded to by the four Fire Departments. The average fire size was listed as about 100 acres, but was noted that this may be skewed upward by factoring in the 1999 Halloween Fire that was 69,000 acres.

In the last 25 years two large fires occurred in whole or in part of the county. They were the Burns Creek Fire (1980) that originated in Wibaux County to the south and burned an estimated total of 120,000 acres. The other fire was the before mentioned Halloween Fire (1999) that started in Richland County and burned into McKenzie County, North Dakota. Extrapolating the information from the BLM (small land presence in the county) and the local firemen the probability of a large fire is one or two occurrences per decade.

Figure 5.1
Fire Districts, Resources
and Past Large Fires



No fires on federal land in the past 30 years have exceeded 100 acres. (Schardt, BLM, June 2005) It is noted however that only a small portion of the county is in BLM ownership.

Information provided by the local firefighters indicates that there are no clear areas of high lightning started ignitions. They appear to be scattered throughout the county fairly evenly.

Individual Community Assessments

Sidney

(Source: Rob Gilbert, Assistant Fire Chief, SVFD, Feb. 2005)

Current Situation

Sidney is located at the very eastern portion of the county on Highway 18 just a few miles west of North Dakota. Sidney's population is about 5000. The community has several larger businesses based on agriculture and oil and gas production. Some of the major assets protected by the Sidney Volunteer Fire Department include, residences, downtown business district, Busch-Ag facility, Sidney Sugars, Thiel subdivision, power plant, railroad corridors, Sidney/Circle subdivision and oil and gas field facilities. Sidney is mostly surrounded by flat agricultural land, which may present a moderate risk when the crops cure out in late summer or early fall. Within the city limits of Sidney the risk of wildfire is low.

Future Development

There has been some new activity in the oil fields and the projected activity will remain high as long as the fuel prices remain elevated. There are new oil wells in the planning stages and are expected to be put into production. Additional construction and the related impacts of more oil field workers in the Sidney area will most likely increase the activity for the fire department. Sidney is seeing some increase in population related to the oil field activity.

Fairview

(Source: Tim Denowh, Fire Chief, Fairview F.D., Feb. 2005)

Current Situation

Fairview is an incorporated community with a population of 709 according to the 2000 U.S. Census. The Fire Department is responsible for the town of Fairview, 180 square miles of NE Richland County, 2 school complexes, several grain terminals, and numerous oil field related facilities. The department also covers 180 square miles of NW McKenzie County, North Dakota, mutual aid for Sidney, MT, Alexander, ND; mutual aid for the National Park Service for the Fort Union Site and the Burlington Northern-Santa Fe Railroad.

Fairview is surrounded primarily by flat agricultural land, which in a dry year can have a moderate risk to wildfire. Inside the bounds of the community the risk of wildfire is low.

Future Development

The increased activity in the oil fields has started a trend of more activity for the fire department. There is more activity on the roads as well as more traffic presenting hazardous materials incidents including fire and spills with vehicle accidents. As a side note the fire chief reports that many of the firefighters are working in the oil fields, keeping them unavailable for firefighting duties for extended periods of time, thus reducing the effectiveness of the fire department over time.

Lambert

(Source: Brian Ligon, Chief, Lambert Fire District, February 10, 2005)

Current Situation

Lambert is an unincorporated community of about 150 people. The Fire District is responsible for the town of Lambert and the surrounding countryside. Much of the surrounding county is either cropland or in the Conservation Reserve Program. The CRP land tends to be a problem in the late summer and fall when it cures out and has not been grazed or cut. Fuel build-up provides an easy target for lightning, machinery caused, or hunter caused fires. The community of Lambert has a low probability for ignition, but the surrounding lands have a moderate risk.

Future Development

Oil field activity has increased and is predicted to continue.

Savage

(Source: Marshall Vojacek, Chief, Savage Fire Dept., March 6, 2005)

Current Situation

Savage is also an unincorporated town with about 300 people. The Savage Fire Department is responsible for the communities of Savage, Crane, a dairy and the Westmoreland Coal Mine and all other assets within their area of responsibility. There are also two Montana Fish, Wildlife and Parks special management areas nearby. These are timbered and very brushy areas that will be very difficult to fight fire in, because they have poor road access and they have such high flashy fuel build-up. There are CRP lands with heavy grass fuels and brush accumulation on numerous farms and ranches. Yellowstone River bottomlands

also provide heavy fuel build-up with recreation activity started fires. Water sources west of town become very scant or nonexistent in the later part of the summer. The town of Savage has a low probability for wildfire, but the surrounding open lands are more likely to have a moderate probability in late summer and early fall.

Future Development

A second dairy is proposed for construction in the dry lands area, which will add to the responsibilities of the Savage department. More land is being purchased for recreation activities like hunting. These lands are no longer being grazed and the fuels build-up with inactivity.

Assessment of Fuel Hazard

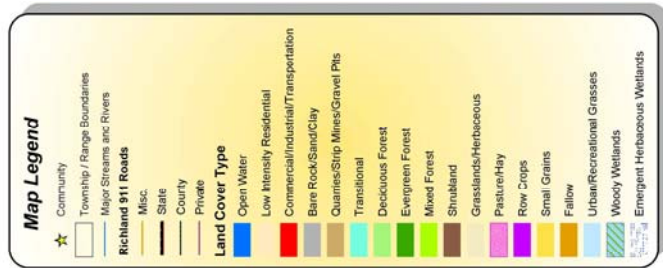
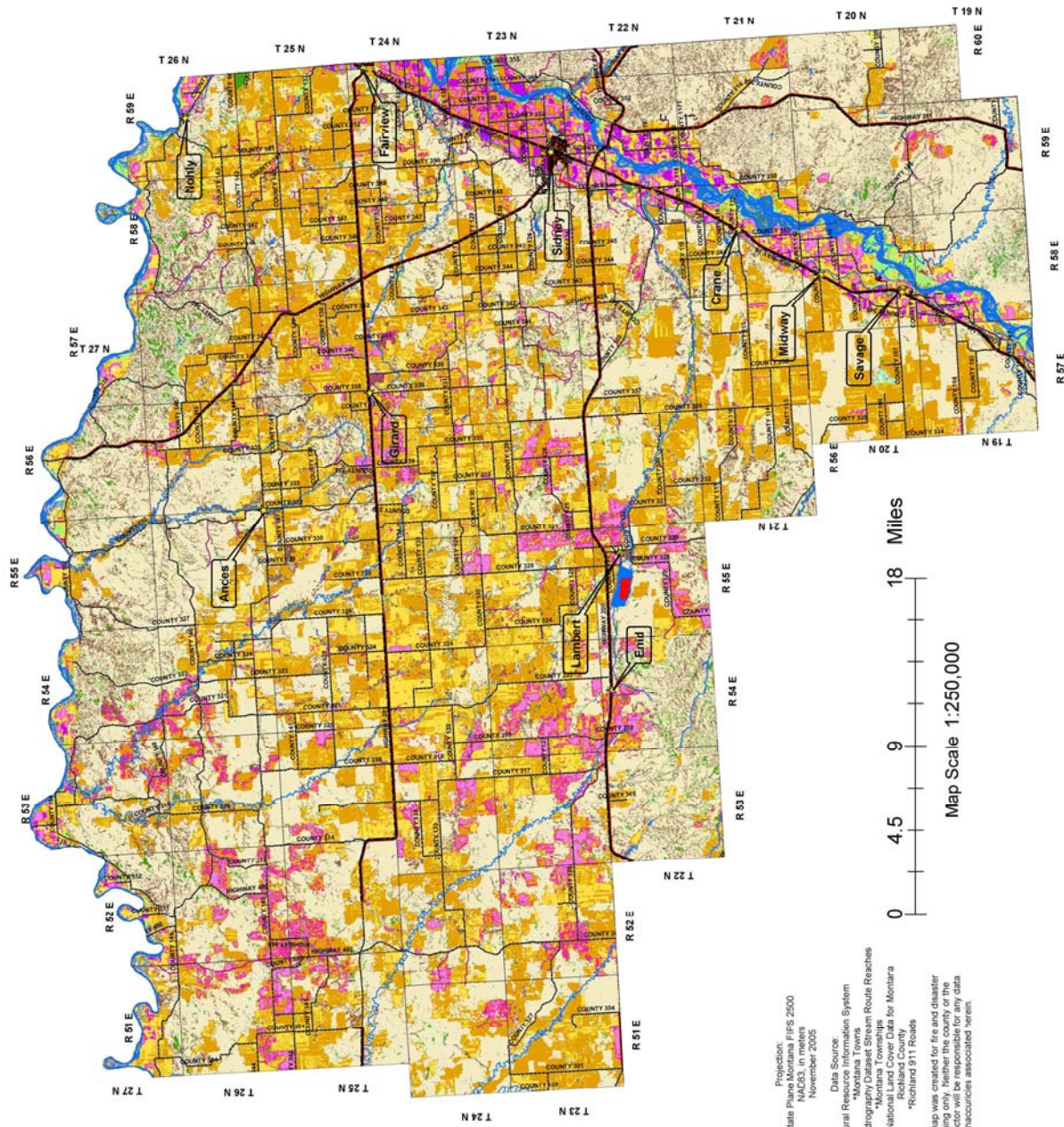
Vegetative Fuels

Richland County has basically three types of topography, flat lowland areas primarily used for agriculture and badlands where oil and gas activity is located. The southeastern border of the county is the Yellowstone River. Vegetation is heavy grasses, brush and cottonwood bottoms. From the Yellowstone River to the north and west the land becomes relatively flat and is utilized as cropland including sugar beets, alfalfa and barley. The northern part of the county is defined by the Missouri River. This part of the county is more broken and has typical eastern Montana badlands. These bottomlands are grassy, brush laden with many cottonwoods. The western portions of the county are remote badlands areas with poor access and very little improvements. They are sparsely vegetated with grasses and juniper trees with some areas of more heavily concentrated juniper stands.

Agriculture in Richland County consists mainly of farming and ranching. Improvements at risk from wildfire include livestock, forage, and range improvements. The agricultural lands of the county have low potential for fire until crops cure out and become dry from mid summer into the fall. In a dry year, the fire danger increases greatly. There can be thousands of acres of dry crops, which are very susceptible to both lightning and man or machinery caused ignitions. Many of these large fields are contiguous and once fire is established difficult to control. The badlands areas of the county present a different situation. These areas are mostly remote with few roads and very low standard roads. Detection of fire starts is also a problem in the badlands. Low population densities and the remoteness can allow a fire to burn for some time before it is detected. In very dry years natural grasses and juniper can support rapidly spreading fire. Richland County like most of eastern Montana experiences strong winds much of the year. Thunderstorms are also a source of ignition and strong winds.



Figure 5.2
VEGETATION
TYPES



Of the 1,333,888 acres of Richland County, 513,197 acres are in cropland. 41, 155 of these acres are irrigated. Information provided by Nancy Heins, FSA, Sidney.

Structural Fuels

From personal observation most homes in the county are typical stick construction with composite asphalt shingled roofs. With the exception of rural residences, for the most part, structural fuel hazards are located within or in close proximity to the various communities. Exceptions to this would be the commercial activities like the Westmoreland Mine, Sidney Sugars, Busch-Ag, the BNSF railroad wooden trestles, power plant and Bostana Dairy. However, human activity at these sites whether it be recreation or commercial creates the potential for fire starts.

There has been an increase in the establishment of summer/recreation residences, both along the Yellowstone and Missouri River corridors. These facilities are being placed in the river bottoms where the fuel build-up from grasses, brush and cottonwoods are present. Typically, little attention is paid to the type of building materials or defensible space for reduction of loss to wildfire.

Assessment of Risk

Ignition Profile

In 2001, all of the communities in Richland County were identified as a medium risk to wildfire in the Federal Register. The listed communities at risk were Crane, Andes, Enid, Fairview, Lambert, Midway, Savage and Sidney.

The Core Group members for the CWPP identified these ignition sources for wildland fire during the second meeting held in Sidney on March 28, 2005.

1. Lightning
2. Railroads (45 miles)
3. Industrial activities
4. Rural residents
5. Power lines
6. Highways/roads
7. Recreation activities
8. Escaped residential control burns
9. Haying activities
10. Oil field activities

The Core Group could identify no clear pattern of lightning caused fires for the county. As expected both railroad fires and highway/roads fires occurred in those corridors. The same is true for power lines. The escaped residential

control burns were mostly related to burning trash in a barrel on private property. Haying and combining activities in the latter part of the summer were mostly caused by equipment malfunctions.

Risk of human-caused ignition is highest along roads and highways, power lines, railroad tracks, and around recreation sites. Risks of human-caused ignition are moderate in areas of dispersed recreation and rural residences. Risks of ignition to wildlands are lowest within the developed areas and on agricultural properties, until late summer. Hunting season appears to be the most active time for human-caused ignitions.

Behavior and Development Trends

The challenges presented by development differ depending on the fuel types, terrain, access, and response times. There is little or no activity by the county for encouraging development of new structures or subdivisions that increase the defensibility for wildfire. The planning board for the county no longer exists. This leaves new development without any local guidance to consider wildfire in the choices for location, building materials, defensible space, and access for emergency vehicles. Many people are happy to consider these things when building, but typically they are not aware of the items they should be thinking about.

One of the problems most identified by the Fire Chiefs is that there is an increase in recreation properties. These are usually in the river corridors and construction of cabins in areas of wildfire concern has become more common. These locations are often remote, have poor access roads and long emergency response times.

Much of eastern Montana and western North Dakota is experiencing a boom in oil field activity. Brian Ligon, Chief for the Lambert Fire Department reports that this oil field activity is and will continue to increase the Department's response numbers. More traffic incidents have been occurring and with those come wildfire ignitions and hazardous material spills.

Unique Wildfire Severity Factors

The badland areas present a special challenge for firefighters in that much of the country is very difficult to access. There are areas with few roads and those that do have roads are often in very poor condition. This situation also adds to response times. Drought over the past 7 or 8 years in the county has left the cedar (juniper) trees in the badlands in a stressed condition. Live fuel moistures in these trees have been very low and are conducive to greater spread rates for fire (Brad Sauer, Fuels Specialist, BLM, Miles City Office, June 2005).

Farm assets that could be at risk include crops, livestock storage facilities such as grain elevators, equipment and machinery. Sugar beets, malting barley for beer, wheat, oats, corn, pinto beans, safflower and alfalfa hay production are the main crops. (Nick Jones Realty, Sidney) Oil and gas is produced and stored in the northern portion of the county. Wildland fire in the areas of oil production has the potential to interrupt production for short periods of time. Human activity in the oil fields also increases the chances for ignition of wildfire.

Critical community infrastructure was identified by the PDM steering committee and the CWPP Core Group. The values for the critical infrastructure are provided in Chapter 3 (PDM) of this plan. Most of the county's critical facilities are at low risk for wildfire. Some of the facilities outside of the communities do have some risk, such as the Westmoreland Coal Mine, which is bordered by some Conservation Reserve Program lands with flashy fuels in late summer (Bink Miller, Vice President Westmoreland Savage Corporation, Savage, MT, Feb. 2005)

Tourism/recreation is an increasing sector in the economy of Richland County. Both residents and visitors enjoy outdoor activities year-round in the county. Most of this activity is either fishing the Yellowstone and Missouri rivers in the spring and summer months and the upland bird and deer hunting in the fall. As mentioned earlier, second homes or cabins are being built in these two river corridors.

Values to be Protected

1. Health and Safety of the public and firefighters
2. Real property, public and private infrastructure
3. Cropland/Grazing lands
4. Recreation/Economic Impacts

1. Health and Safety

Richland County has a well-staffed volunteer firefighting force that is spread out into the county. There are 14 satellite locations with equipment strategically located. Remote locations, low population numbers, and poor communication systems between firefighters, EMS personnel and other support functions can add more challenges to fighting wildfire. Richland County is concerned about the health and safety of their fire department personnel.

Adding to that concern the county has been in a drought situation for nearly a decade. The potential for greater number of fires at one time and large fires exist under these strained drought conditions. Richland County Fire Departments have a good safety record in suppression of wildfires and desires to maintain that record. Circumstances related to these conditions demand that attention be paid to the safety of the firefighting staff and the public.

2. Real Property, Public and Private Infrastructure

In many parts of Richland County, wildfires are not only a threat to the landscape, but also to communities, homes, ranches, businesses or infrastructure facilities. All of the communities in the county have a medium rating for wildfire in the Communities At Risk list established for Montana. Two of the biggest concerns in terms of fuel concentrations are found in either Conservation Reserve Program acres or in Fish, Wildlife and Parks Special Management areas. These two categories of lands should be looked at closely in terms of putting people and property at risk.

Montana Fish, Wildlife and Parks Special Management Area Near Crane—note heavy, flashy ground fuels



Photo by Rand Herzberg

3. Cropland and Grazing Lands

Richland County depends heavily upon agriculture for much of its income. Croplands, especially in late summer can be at risk to wildfire. Losses of crops can be very devastating to ranchers and farmers. These losses also affect other businesses and the county tax base.

Grazing of private, state and federal land is also an important component to many ranching operations. Losses of forage to wildfire have the same impact as noted above.

4. Recreation and Economic Impacts

Fish and Wildlife Resource

Richland County has a large amount of intact native wildlife habitat. The two primary habitat types are grasslands and riparian areas. According to John Ensign, Montana Department of Fish, Wildlife and Parks (FWP), Region 7 Wildlife Manager there has been very little formal wildlife population inventories in the county.

Big game species include mule deer, white-tailed deer and antelope. Small mammals such as fox, badgers, hares, raccoon and coyotes are common.

Numerous raptors are found in the county including golden and bald eagles, kestrels, red-tailed hawks, Swainson's hawk and ferruginous hawks, prairie falcons and owls. Sharp-tailed and sage grouse, turkey, Hungarian partridge and pheasant are found in the uplands. Migrating ducks and geese pass through the county and shorebirds frequent the Yellowstone and Missouri rivers. Small numbers of year-around songbirds and numbers of migratory birds pass through and/or spend some portion of the year here.

The fishery in Richland County is composed almost exclusively of warm water species in the ponds and in the Yellowstone and Missouri rivers, including walleye, sauger, sturgeon, catfish, and paddlefish. Painted turtles, various snakes including rattlesnakes, other reptiles and amphibians are present.

Recreation Resource

Hunting and fishing provide recreation experiences in the county for residences and non-residents. According to Bea Sturtz of the FWP, Division, there are 17 landowner participants in the program. Block management lands are private lands that are made available for public hunting through this program. Non-resident hunters come primarily from the upper Midwest.

Wildfire has the ability to impact recreation in Richland County. The hunting season, both big game and upland bird have a positive economic impact. Wildfire season usually occurs during late summer and early fall when these activities are occurring and can easily deter hunters from coming to the area if there are fire closures or active wildfires going on. Fishing season on the Missouri and Yellowstone Rivers may also be impacted by an active wildfire season.

Assessment of Economic Values

Agriculture, health care, manufacturing, retail trade and mining make up the larger sectors of the economy. Oil and gas production is relatively prevalent land

use and has been identified by the firefighters in each department as a primary concern for wildfire ignitions. Detailed economic information is provided in Chapter 1.

Assessment of Ecological Values

As a result of the ranges in elevation, aspect, temperature, precipitation, vegetation, and terrain in the county, Richland County provides a moderate amount of wildlife habitat. The county supports species such as white-tailed and mule deer, upland game birds as well as warm water fish species in the rivers and ponds. In addition, numerous small mammals, fur-bearers, and migratory and non-migratory songbirds reside in the county.

Air quality is generally excellent due to natural dispersal and lack of major industrial in and to the west of the county. Short-duration impacts to air quality include smoke from wildland fire in the summer and fall, smoke from ditch burning in the spring, dust from travel on unpaved roads, and dust from agricultural practices.

Potential Loss Estimate-Wildfire Scenario

A wildland fire scenario has been developed in order to estimate potential losses. The loss estimate was developed with input from Nick Jones of Nick Jones Realty, Sidney.

In this scenario, a late summer lightning storm passes over a combination farm/ranch operation in the western portion of Richland County. The fire starts west of the farmstead compound in a field of CRP, which has cured out over the summer and supports rapid spread of the fire into the compound. Because there are numerous thunderstorm cells in the area the winds are 30 miles per hour out of the west. The property is overrun by fire in a short time. The fire only burns 120 acres, but it burns through all of the buildings around the home. The family is able to escape to the east on the county road. The home and 7 of the 10 outbuildings are lost to the fire as well as other associated structures. Several farm implements and vehicles are also lost. This incident happened so quickly there was no chance for the fire department to respond in time to save the buildings. The family had the only option of getting away quickly. The losses totaled \$352,610.

Table 5.2 Farmstead Fire-Richland County

Asset	Number	Cost per each	Total cost
Residence	1	\$120,000	\$120,000
Hay barn	2	\$35,000	\$70,000
Machine shed	2	\$15,000	\$30,000
Tractor	1	\$45,000	\$45,000
'98 Ford ¾ ton P.U	1	\$11,000	\$11,000
Corrals	3	\$4000	\$12,000
Semi tractor/trailer	1	\$60,000	\$60,000
Grain storage	2	\$6000	\$12,000
Tons of hay	85	\$80	\$6,800
½ mile of fence	1	\$2,500	\$2,500
Suppression costs		\$4,310	\$4,310
Total			\$352,610

The above costs were determined by contractor conversations with Randy Sanders, Montana DNRC (past volunteer fireman for the Savage F.D.). The following figures are what the Montana DNRC approximately pays for contracting these types of fully staffed engines.

2 Type 6 engines, fully staffed at \$1330/14 hour shift	\$2,660
Structure engine, fully staffed at \$1600/14 hour shift	\$1,600
Food and water	<u>\$ 50</u>
Total	\$4,310

Assessment of Fire Protection Preparedness and Capability

Table 5.3 Fire Fighting Capability Ratings

Department	ISO* Rating for Structure Fires	Rating for grass fire capability	Rating for wildfire capability	Number of firefighters in Department
Sidney	4	1	1	34
Lambert	10	5	5	15-20
Savage	10	1	1	28
Fairview	7	1	1	23

Sources: Various Fire Departments

*ISO=Insurance Services Organization

Source of ratings came from the Fire Chiefs or Deputy Chiefs of the above departments. Those were based on 1 being very able and 10 being unable. Over the past 30 years Richland County received the following funds through the Rural Community Fire Protection Grant (RCFP), the Volunteer Fire Assistance

Grant (VFA) and the Rural Fire Assistance Grant (RFA). Source: Mike Weiderhold, DNRC, Missoula, June 2, 2005. The funds received through these programs have improved the capability of the Fire Departments, especially in the last four years.

Table 5.4 Fire Assistance Funds to Richland County

	RCFP	VFA/RFA	VFA/RFA	VFA/RFA	VFA/RFA	Total
Year	75-2000	2001	2002	2003	2004	
Richland	\$14,110	\$18,271	\$13,965	\$25,150	\$20,000	\$91,496

Sidney Volunteer Fire Department



Photo by Rob Gilbert

Table 5.5 Richland County Fire Apparatus

Department	Description	Capacities/Features/Comments
Sidney	Pierce/KW, 2003 Type I pumper	1250 GPM, 1000 gal., NCW/Compressed air foam
Sidney	Ford F800 Forstner, pumper, 1991	1000 GPM, 1000 gal., excellent condition, metered foam--County Fire Unit Only
Sidney	Ford F900 Heavy tender, 1990	300 GPM, 1500 gal., excellent condition County Fire Unit Only
Sidney	White/Volvo, 1994 tender	300 GPM, 3500 gal., excellent cond., 2 portatanks-2200 gal. each, quick dump valve, County Fire Unit Only
Sidney	Ford F350, 4x4, 1994 Type 6 pumper	300 GPM, 250 gal., excellent cond. Foam proportioner
Sidney	Ford F350, 4x4, 1999 Type 6 pumper	150 GPM, 200 gal., excellent cond. Foam proportioner
Sidney	12 each Type 6 pumpers, 4x4	Good cond. Spread around the county at satellite locations
Sidney	2 each heavy units	1200 gal., good condition at satellite locations
Sidney	Equipment van	City/County
Sidney	2 pumpers	City of Sidney
Sidney	1 aerial unit	City of Sidney
Sidney	Morning Pride Turnouts	Basofil coat and pants, 38 each
Sidney	Indura Cotton Coveralls	Wildlands, 40 each
Sidney	MSA SCBA's	Low press. 2216 integrated pass alarms, 27 each
Sidney	Spare air cylinders	Low press 2216, approx. 60
Sidney	Kenwood radios, mobile	16 each
Sidney	Motorola radios, mobile	14 each with 2 spare units
Sidney	Kenwood radios, handheld	39 each
Sidney	Motorola radios, handheld	8 each
Sidney	Bendix King radio, mobile	1 each
Sidney	Bendix King radio, handheld	2 each
Sidney	Pro Pak Foam Unit	Class A or B, 2 County Units
Sidney	Stihl Chainsaws	3
Fairview	KW/Pierce, type 1 engine, 2003	1250 GPM, 1000 gal. CAFS
Fairview	Ford/Central, type 1 engine, 1984	1000 GPM, 1000 gal. cross mount
Fairview	Ford/Howe, type 2 engine, 1965	750 GPM, 500 gal. pump and roll—60 gpm
Fairview	Chevy R3500, type 6 engine, 1990, 4x4	125 GPM, 500 gal.
Fairview	Chevy C7000, type 3 engine, 1988, 4x2	325 GPM, 1200 gal.
Fairview	Ford F350, type 6 engine, 1994, 4x4	250 GPM, 300 gal.
Fairview	IHC 9400 tanker, 1995	300 GPM, 4000 gal., pump tanks

Fairview	Ford E350 van, 1978	Equipment unit, cascade system
Fairview	Dodge 3500, 4x4, type 6, 2001	125 GPM, 375 gal. Foam Pro
Fairview	Scott airpak 50 w/ pass	30 min. Alum. Cylinder, 8 each
Fairview	Scott 2.2	30 min. Alum. Cylinder, 8 each
Fairview	Wildland PPE Nomex 2 pc.	24 each
Fairview	Morning Pride Structure PPE, Nomex	24 each
Fairview	Motorola, 16 ch. mobile	6 each
Fairview	Kenwood, 128 ch. mobile	1 each
Fairview	Kenwood, 32 ch. Mobile	2 each
Fairview	Kenwood, portable radio, 32 ch.	4 each
Fairview	Motorola, portable radio, 16 ch.	7 each
Fairview	Cascade compressor	5000 psi, 1 each
Savage	Freightliner, 2004 pumper	1250 GPM pump, 1000 gal. tank
Savage	International 1824, 1984, 4x4 wildland pumper	250 GPM pump, 600 gal. tank
Savage	International 1624, 1980 pumper/wildland rescue	200 GPM pump, 500 gal. tank
Savage	Kenworth 7K-DS, tender, 1977	200 GPM pump, 4200 gal. tank
Savage	Ford F350, 4x4 type 6 wildlands engine, 1995	125 GPM pump, 200 gal. tank
Savage	GMC 35, 4x4 type 6 wildlands engine, 1977	125 GPM pump, 300 gal. tank
Savage	Ford E303, 1982	Equipment van
Savage	SCBA, ISI new	10 each
Savage	Structure turnouts, 2003	28 sets
Savage	Wildland pants, shirts, goggles	28 sets
Savage	Port-a-pump, Honda	400 GPM, 1 each
Savage	Port-a-fan	22,000 cfpm, 1 each
Savage	Cascade system	4-2160 pressure, 1 each
Savage	Portable radios, MT 1000	Motorola, 8 each
Savage	Pagers, Motorola Monitor II, III, and IV	34 each
Savage	Mobile radios, Motorola	Mac Trac 300, 8 each
Savage	Mobile radios, Motorola	Mac Trac 300, 8 each
Savage	Portatank	2500 gal., 1 each
Savage	SCBA Compressor w/ 3-4500 bottles and filling station	1 each
Savage	Drip Liter	Wajax, 4 each
Lambert	GMC ¾ T 4x4, 1982	250 gal. skid unit
Lambert	Chevy ¾ T 4x4, 1982	250 gal. skid unit
Lambert	Ford F600, 1970	2000 gal. (working on a replacement)
Lambert	Ford pumper, 1977	1200 gal.
Lambert	Dodge, 4x4, 1965	500 gal. DSL truck
Lambert	Kenwood radios	All trucks equipped
Lambert	Radios, handheld	2 each

Fire equipment lists were provided by the respective fire departments.

In addition to the above resources, the BLM has one Type 6 and two Type 4 engines with a response time of two hours and two Single Engine Airtankers (SEAT's) with a response time of one hour from Miles City.

Mitigation Plan

Background

Existing situation

Richland County has been in a drought for almost a decade. Historically this is a common cycle in weather patterns broken by periods of above average moisture. In the spring and early summer of 2005 rainfall has been far above the average. However, live fuel moistures in juniper trees are still below normal. (Brad Sauer, Fuels Specialist, BLM, Miles City, MT, June 2005). The drought may have been mitigated some, but it is still in effect. To come out of the current drought situation, it will likely take several years of above average precipitation.

Recent history indicates that most wildfires are relatively small, less than 100 acres and have not been a serious threat to the communities. However there have been several large fires and the potential under the right weather and fuel conditions wildfire could enter the urban interface or certainly impact rural residences. The county does have some notable issues with structures and facilities near CRP lands, river bottomlands, Fish, Wildlife and Parks Special Management Areas and crops from mid-summer into the fall. There are also some safety issues with some of these areas, primarily from a fire equipment access standpoint.

There are some opportunities to improve not only defensible space for residents, but also to reduce their structures' ignitability through an education effort.

Most of the critical infrastructure in the county is in defensible space for wildfire and the fire departments are making a conscious effort to keep them in that condition.

The wildland fire service in the county has a number of positive attributes. The Sidney Volunteer Fire Department has an Assistant Chief that is paid in part from fire funds. This allows that position to devote more time to fire business than a normal volunteer fireman would have the time to dedicate. The county and Sidney benefit from this paid position.

There are four departments spread fairly well geographically. The fire departments have been proactive in positioning their satellite equipment. They have trained firefighters near them for staffing. The equipment for the fire

departments appears to be relevant to their needs; however some of it is becoming outdated. Volunteer firefighters numbers seem to be appropriate, but as with almost any volunteer fire department, many of the firefighters are not available part of the time. Training for volunteer firefighters is usually a challenge for most departments. It is difficult to find the time to work in training, when most have jobs and other responsibilities. The level of fire protection in Richland County is good and the four fire departments work well together, sharing information and assisting each other with fires in their areas of responsibility.

The key issues facing the county are to identify areas of unreliable water sources for firefighting, expanding the fire fighting capabilities of the four departments and maintaining a well-trained staff of volunteer firefighters.

Organizational structure

During the first CWPP meeting a number of firefighters from throughout the county were present. In order to have a smaller working group the Core Group was established at the first meeting. The Core Group consisted of firefighters from each of the four fire departments.

There was also assistance from the Montana DNRC, BLM, District IV DES Representative, and Farm Services Agency. The contractor took feedback provided from the Core Group to develop this mitigation plan. Once the plan was written the Core Group and the others mentioned above had the opportunity to review the plan to add, subtract or modify it. Public involvement was solicited at the third PDM meeting and those items were included in this plan. The PDM/CWPP went out for a 30 day review in September, 2005 and those comments were considered in the finalization of the CWPP.

Goals and Objectives

Richland County firefighters and the County DES Coordinator developed the following goals, objectives, and projects with additional suggestions from the Pre-Disaster Mitigation Steering Committee and the contractor.

Goal: Reduce the impacts of wildfire.

Objective 1: Reduce the area of Wildland Urban Interface and critical resources burned.

- 1.1 Place firebreaks around CRP fields and residential yard areas to protect farmsteads.
- 1.2 Provide information (via FSA and others) to CRP landowners on projects to reduce risk of fire to improvements and buildings.
- 1.3 Develop a demonstration project.

- 1.4 Work with the BLM/DNRC to plan and implement strategic fuels reduction projects, especially near Wildland Urban Interface boundaries.

Objective 2: Educate the public about wildfire in the county.

- 2.1 Place fire danger indicator signs along major highways (in areas with more traffic like near towns)
- 2.2 In high danger fire years in the hunting season, develop a poster aimed at sportsmen to put in motels, restaurants, bars, sporting good stores, schools, etc.
- 2.3 Public education campaigns (possibly sponsored by local major businesses).
- 2.4 Utilize the "Living with Fire, A Guide for the Homeowner", a Northern Rockies Fire Prevention Team publication to assist property owners at risk. Fire Department personnel to identify and work with these property owners.

Objective 3: Expand firefighting capabilities.

- 3.1 Increase number of persons trained and qualified as Type 3 and Type 4 Incident Commanders in Richland County.
- 3.2 Continue training opportunities for firefighters.

Desired Condition/Strategic Plan

The desired condition for Richland County is to maintain a safety conscious, well trained firefighting force with adequate personal protective equipment and up-to-date fire apparatus commensurate with the county's needs. The strategic plan to reach this desired condition is shown in the table below. Accomplishment of this strategic plan will follow the same kind of collaboration that went into the development of the CWPP, utilizing DES, BLM, DNRC, FSA and other interested stakeholders. Ranking of these projects was established by discussions with the contractor and the firemen and then validated through the review process by the county.

Table 5.6 Strategic Plan

<i>Project Number</i>	<i>Project description</i>	<i>Rank</i>	<i>Potential Resources</i>
1.1	Place firebreaks around CRP fields to protect farmsteads	H	Fire Departments, FSA and landowner
1.2	Provide information to CRP landowners for projects to reduce risk of fire to structures	M	Fire Departments, FSA and landowner
1.3	Develop a demonstration project for CRP	M	Fire Departments, FSA and landowner
1.4	Work with BLM/DNRC to plan and implement strategic fuels reduction projects	M	Fire Departments, BLM and DNRC

2.1	Place fire danger indicator signs along major highways near towns	M	Fire Departments, Montana Department of Transportation, BLM
2.2	In high fire danger years, develop poster aimed at sportsmen	M	Fire Departments, local businesses
2.3	Public education campaigns	M	Fire Departments and local businesses, BLM and DSL
2.4	Utilize "Living with Fire" publication	M	Fire Departments, landowners
3.1	Increase number of trained Type 3 and 4 Incident Commanders	H	Fire Departments, BLM, and DSL
3.2	Continue training opportunities for firefighters	H	Fire Departments, BLM, and DSL

(Letters H, M, L before a project indicate the level of priority given to the project H=High priority; M=Moderate priority, L=Low priority, NR=No Ranking made)

Roles and Responsibilities

The responsibility for the implementation and maintenance of this plan lies with the county commissioners. Assistance and expertise to implement this plan will come primarily from the fire departments' leadership and the DES Coordinator. There will be many opportunities for a variety of other sources such as the Farm Services Agency, businesses, local governments and volunteers to help make parts of this plan come to fruition. The BLM is a key member in the development of the CWPP by providing funding, expertise, data, mapping, reviews and other support.

Plan Review and Updating

This plan should be reviewed for currency every three to five years, unless there are major changes in the county that would require an earlier update. Items that may initiate a need for a change in the plan would be things like a major wildfire, accidents involving serious injury or loss of life related to wildfire or a change in county leadership. The county commissioners have the responsibility to make that determination. They may wish to enlist the help of the Local Emergency Planning Committee for the plan review and seeing that it is updated when necessary.

Sources:

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**CWPP MEETING NOTES
AND
SIGN-IN SHEETS**

Community Wildfire Protection Plan for Richland County, Feb 7, 2005
(Notes taken by Rand Herzberg)

Objectives for this meeting

- *Give you an introduction to the project
- *Explain the purpose of the project and the scheduling to get it accomplished
- *Enlist your help.....you have the knowledge of the local situation and know best what your county needs
- *Need your help to identify the wildfire hazards and prioritize those
- *Have you identify the critical facilities and the vulnerable populations in communities and the county (this will be done in the PDM meeting later this evening)
- *Give me a sense of the values at risk (examples: high value forage, critical wildlife habitats, etc)
- *Have you understand that this is a plan for the county's use and the more involvement I get from you and the county, the more useful it will be and the better your chances are for funding of additional on-the-ground projects.
- *Establish a Core Group of key individuals to work with me on this project**

Funding

*Funds from the BLM have paid for the contract to develop these plans for your county. The contract products are both a Predisaster Mitigation Plan and a Community Wildfire Protection Plan. Cossitt consulting out of Park City, MT has the contract....we have 5 counties, McCone, Richland, Dawson, Wibaux and Prairie. McCone County has agreed to be the primary contact for all of these counties for the administration of the contract. However, the contents of the plans will come from each of the counties. The PDM plan will take into account all hazards and the CWPP focuses on wildfire as part of that plan. My job is to help these counties develop a CWPP that suits the county's needs.

A little background on Community Wildfire Protection Plans

- *2003 Healthy Forest Restoration Act (primarily affects BLM and Forest Service)
- *provides incentives for communities to get involved in fire protection
- *several reasons, who knows better than the local folks what they need

- *once a plan is developed, makes counties and communities more competitive for project \$'s
- *allows lots of flexibility---some minor requirements, but depth is really up to you

*Minimum requirements of CWPP are:

- *1 Collaboration....developed by local and state government reps in consultation with federal agencies (in this case the BLM)
- *2 Prioritized Fuel Reduction... identifies and prioritizes areas for hazardous fuel reduction treatments & recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure--- usually done by the local fire depts..
- *3 Treatment of Structural Ignitability.... recommends measures that homeowners and communities can take to reduce the ignitability of structures throughout the area of the plan.

Who must mutually agree to the final contents of the plan?

- *Local governments (county and communities)
- *The local fire departments
- *State entity responsible for forest management, DNRC

The above group will need to consult with local representatives of the BLM...my contact for the BLM for this project is through Dena Lang from Miles City, who I have found to be very helpful and interested in seeing the county get a grassroots-based plan.

What kinds of things can be addressed in the plans?

- *wildfire response, hazard mitigation (projects to reduce hazards), community preparedness, structure protection...whatever you think best suits your communities

Other benefits

- *the process can help communities clarify and refine its priorities for protection of life, property, and critical infrastructure (water plant as example) in the Wildland Urban Interface (more on that in just a minute) It also allows you to determine the boundaries of what your WUI's are.

Your role

*In a series of meetings (probably just 2), phone calls, etc. you can help me describe the setting of your county, identify existing hazards in terms of wildfire, what capabilities the county has for suppression, what projects you would like to do, what the priorities of those projects are and determine what the substance and detail of your plans will be. You will also have the say so on what the WUI boundaries for your communities will be. There are some guidelines for this, but they do allow quite a lot of flexibility. You can also help me by identify other key people who should be involved in this process.

Wildland Urban Interface

I want to talk just briefly about this. This is something your group will need to give some thought to in the next few months. The WUI is describes as the zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels. This is where a high percentage of the risk to life and property occurs...where it hits the fan so to speak. It is where the most complex and dangerous situations for firefighters exist.

One of the most important benefits of having a CWPP completed is that it allows you to establish your WUI interface. Without a CWPP the boundaries are limited to within ½ mile of a communities boundary or within 1 and ½ miles when mitigating circumstances exist (example....a long steep slope leading into a community with heavy vegetation) This is a canned definition that may not fit your communities, but with a CWPP you dictate where that boundary is to be drawn. Once the plan is accepted, the WUI boundary is given a higher priority for funding than non-WUI lands. Half of the Healthy Forest Restoration Act funds must be spent in the WUI. I should also mention that fuel treatments can occur along evacuation routes regardless of the distance from the community.

Questions?

1) What are the wildfire hazards in your Communities and County?

CRP, lots of it in the W and NW and some the full length of the County....issue is primarily heavy grass. Large blocks of CRP, with continuous fuels. Lightning is usually not the ignition source because the storms are usually accompanied by rain. Assume that most are then human caused....need to get more info on this source of ignition.

Trees in the river bottoms are sources for holdover fires from lightning....once things dry out then the grass catches on fire.

FWP special areas have heavy fuel (areas like Elk Island, Seven Sisters, Diamond Willow)....contact for these would be in the Miles City Office.

In some areas farmsteads are scattered out in areas where safe escape routes are a concern.

Example cited was the Halloween Fire on October 31, 1999 where weed burning was the cause and burned 63,000 acres with one lost structure.

2) Can you give me your first cut on prioritizing your hazards?

First priority would be CRP land with its heavy fuels in areas where it has potential to burn structures. Second priority would be river bottom lands with heavy fuels that holdover fire that eventually gets into the grass type.

3) What other values besides people and infrastructure do you want to be part of this plan?

- *Westmoreland Coal Mine – has CRP around it
- *Bostana Dairy
- *New Dairy south of Savage will be built
- *New Gas plant built outside of Sidney—Ketchum, Brett, Highland Partners
- *Lots of oil wells in the county
- *Snowden RR bridge and others-all wood construction (BNSF)
- *Road bridges-concrete....not an issue
- *Some houses built in the cottonwood bottoms....more are occurring...some seasonal and some full time residents

4) What maps should we use as a base map for this project?

- *County Road Map may show types of ownership.
- *County has a book that shows ownership (land status book in Court House?)
- *Farm Services Agency will have ownership of CRP lands.
- *Call Rob Gilbert for more information
- *Small communities with phone trees for emergencies and have satellite trucks are Girard, Elmdale, Charlie Creek.
- *Firemen would like to have a map that shows the areas of responsibility for the 4 depts. in Richland County

5) What other interested individuals, organizations, etc. may be interested in this process?

- *Westmoreland Mine (Bink Miller...798-3651 Vice President, Savage Mine)

*Gas plant---need to get more info on this and contact them.

Established Core Group for Richland County CWPP

Name	Title
Marshall Vojacek	Chief, Savage FD
Tim Denowh	Chief, Fairview FD
Brian Ligon	Lambert FD
Rob Gilbert...chair	Sidney FD

Next meeting with Richland County will be March 28th at 5:30 pm...place to be decided.

Rand Herzberg

Attendance Sheet					
Activity <u>Richland County CWPP meeting</u>		Date(s) <u>FEB. 7, 2005</u>			
Location <u>Sidney</u>		Duration <u>1.25 hrs</u>			
Name & Title	Affiliation	E-Mail Address & Phone#	Agency Use Only		
Name: <u>DEL ZADROW</u>	<u>SIDNEY FIRE DEPT</u>	<u>406 433-1122</u>			
Title: <u>DEPUTY CHIEF</u>					
Name: <u>Marshall Voyacek</u>	<u>Savage Fire Dept.</u>	<u>406-776-2257 Home</u>			
Title: <u>Chief</u>		<u>406 433 433-2012 Work</u>			
Name: <u>Chuck Quinell</u>	<u>Savage Fire Dept.</u>	<u>406-776-2331</u>			
Title: <u>Asst. Chief</u>		<u>406-489-0331 (work)</u>			
Name: <u>Randy Sanders</u>	<u>DNRC</u>	<u>406-233-2904 work</u>			
Title: <u>Fire Program Manager</u>		<u>406-489-2034 cell</u>			
Name: <u>ERIC LEPISTO</u>	<u>BLM</u>	<u>Eric-Lepisto Ent.blm.gov</u>			
Title: <u>Assistant Fire Mgmt Officer</u>		<u>406-233-2903</u>			
Name: <u>Rob Gilbert</u>	<u>SIDNEY FIRE DEPT</u>	<u>406-433-1122</u>			
Title: <u>DEPUTY CHIEF, DDTY DES</u>		<u>suftel@midrivers.com</u>			
Name: <u>Tim Denough</u>	<u>FAIRVIEW FIRE DEPT</u>	<u>701 744-5486</u>			
Title: <u>Chief</u>		<u>tjdno@midrivers.com</u>			
Name: <u>Steve Andrews</u>	<u>FAIRVIEW Fire Dept</u>	<u>406 742-5426</u>			
Title: <u>Ass chief</u>		<u>stouhles@midrivers.com</u>			
Name: <u>Alan O'moth</u>	<u>Fairview Fire Dept</u>	<u>406-747-8222</u>			
Title: <u>Sec / Treas</u>		<u>a-omoth@yahoo.com</u>			
Name: <u>Butch Randers</u>	<u>Richland County</u>	<u>406-433-2220</u>			
Title: <u>Dez Cook</u>		<u>Butch-Randers@msulink.martiana.edu</u>			
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Rev. 4/23/03

Second round of meetings for CWPP with Core Group for Richland County
(Notes taken by Rand Herzberg)

Meeting was held at 5:30 p.m. on March 28, 2005 at the Sidney Library

Attendees sign in sheet is attached.

CRP lands

After introductions we discussed what the possibilities are with Conservation Reserve Program lands are. A handout sheet given to us by Nancy Heins of the Farm Services Agency (FSA) of Sidney and was passed out. She gave them a quick rundown on what changes have occurred with CRP lands. She believes that there is a less of problem in the last few years with CRP being a fire danger. The rules of CRP lands have changed since 2002 and those changes allow for some mowing to reduce the fire danger. Firebreaks are also now acceptable. There are two kinds of firebreaks, barren ground or mowing. In order to conduct firebreaks on CRP lands an amendment must be made to the conservation plan through the FSA office.

If there is a going fire it is permissible to blade or disk on CRP ground to stop a fire. This does not require contact with the FSA in an emergency situation.

Risk Assessment

A portion of the risk assessment (values at risk and the assessment of fire protection preparedness and capability) was handed out for the Core Group to look at for changes or omissions. They were given a month to review and give their comments back to me.

Fire Frequency/Fuels hazards

We revisited what fuel types they typically fight fire in and they validated that the information gathered on the first meeting was sufficient. We talked about fire frequency and if there were any places in the county that seem to show a pattern of lightning starts. No readily identifiable pattern exists.

For future feedback I asked for several items:

From the portion of the Risk Assessment I handed out I asked them to validate the preparedness and firefighter capability.

We had a discussion about what should be on the base map and the items asked for where: 1. critical infrastructure/water sources/etc, 2. Wildland Urban Interface boundaries, and 3. a wish list of attributes they would like to see on a base map.

Draft Goals for the CWPP

We reviewed the draft goals and the core group agreed to the ones as presented.

Ignition Sources

We went over the draft list of these and the group added 1. haying, 2. noted they had 45 miles of railroad and 3. oil field activity.

Project Proposals

We had a discussion about hazardous fuels reduction and educational component is desired (both for firefighters and the public). We talked about that this effort was not for acquisition of equipment or gear. I did encourage them to include projects on state and BLM lands. Signing is also a possibility for a proposal, such a fire danger rating signs in key locations. I told them that we were interested in a wide range of projects and if they had any questions about whether or not a project would be considered to call Dena Lang 233-2907 or me at 446-2121.

I asked for a list of preliminary projects by April 30th.

We talked about what was next in the project. I told them that my job was to collect their information to create a final draft of the risk assessment, which they will have a chance to review. After I get their comments back I will finalize the risk assessment and then begin on the mitigation plan.

Rand Herzberg

Activity CWPP Core Group Meeting
Location Sidney Date(s) March 28
Duration 1.25 hrs

Rev. 4/23/03

CHAPTER 6: PLAN MAINTENANCE AND COORDINATION

Responsible Parties

The Richland County Commissioners will be responsible for ensuring that the CWPP/PDM Plan is kept current and also for evaluating its effectiveness. With the adoption of this plan, the commissioners designate the Richland County Disaster and Emergency Services Coordinator and the Chair of the Local Emergency Planning Committee (LEPC) as the co-leads in accomplishing this ongoing responsibility on their behalf.

Review Triggers

Any of the following three situations could trigger review of the plan's effectiveness or currency and update of the CWPP/PDM Plan.

1. The occurrence of a major natural disaster either in the county or nearby.
2. The passage of time.
3. A change in state or federal regulations with which the county must comply.

Criteria for Evaluating the Plan

When review of the CWPP/PDM plan is triggered by one of the three situations listed above, the plan will also be evaluated for effectiveness and comprehensiveness. The criteria against which the plan will be evaluated will include, but not be limited to:

- Whether any potential natural hazards have developed that were not addressed in the plan,
- Whether any disasters have occurred which were not addressed in the plan,
- Whether any unanticipated development has occurred that could be vulnerable to natural disasters, and
- Whether any additional project ideas have been developed.

Procedures

Should a major natural disaster occur in Richland County the LEPC shall meet following the disaster to review the after action report. Upon review of this report, any changes needed to the CWPP/PDM Plan will be recommended to the County Commission and made by the County Disaster and Emergency Services Coordinator following their concurrence.

In the absence of a major natural disaster, each January starting in 2007, the LEPC will meet to review the PDM Plan and recommend any needed changes. The primary emphasis of such review will be on the goals, objectives, and specific actions/projects portion of the plan. The LEPC will:

- review the work of the past year, identifying key factors that may have affected accomplishing priority projects, and identifying completed projects
- identify any needed changes or additions to the mitigation strategy (new or changed goals, objectives, actions/projects)
- clarify priorities for projects for the upcoming year and the work tasks needed to accomplish those projects

The LEPC meeting will be noticed in the local newspapers and the public and individuals who served on the Steering Committee for development of the original plan will be encouraged to attend. In the interim, the County Disaster and Emergency Services Coordinator will maintain a file into which comments or input on changes to the plan can be kept. The comments in this file will be provided at the LEPC/public meeting to review the plan.

Finally, should state or federal regulations with which the County must comply be significantly changed, the County Disaster and Emergency Services Coordinator will notice and hold an LEPC meeting. At this meeting he/she will inform the LEPC of the new requirements and together with the LEPC, determine whether changes to the CWPP/PDM Plan are warranted.

Every five years, beginning in 2010, the CWPP/PDM Plan will be updated and submitted to Montana Disaster Emergency Services and subsequently to the Federal Emergency Management Agency (FEMA) for approval.

Incorporation into other Plans

Staff of the incorporated communities of Sidney and Fairview and of Richland County have been made aware of the CWPP/Pre-Disaster Mitigation Plan by the County Disaster and Emergency Services Coordinator and through the planning process. The projects in the CWPP/PDM Plan can be incorporated as appropriate into existing plans, annual budgets, and any Growth Policy that may be developed or updated for the county or incorporated communities.

The County Disaster and Emergency Services Coordinator was extensively involved in the preparation of the CWPP/PDM Plan and will continue to identify options for incorporation into other plans.

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